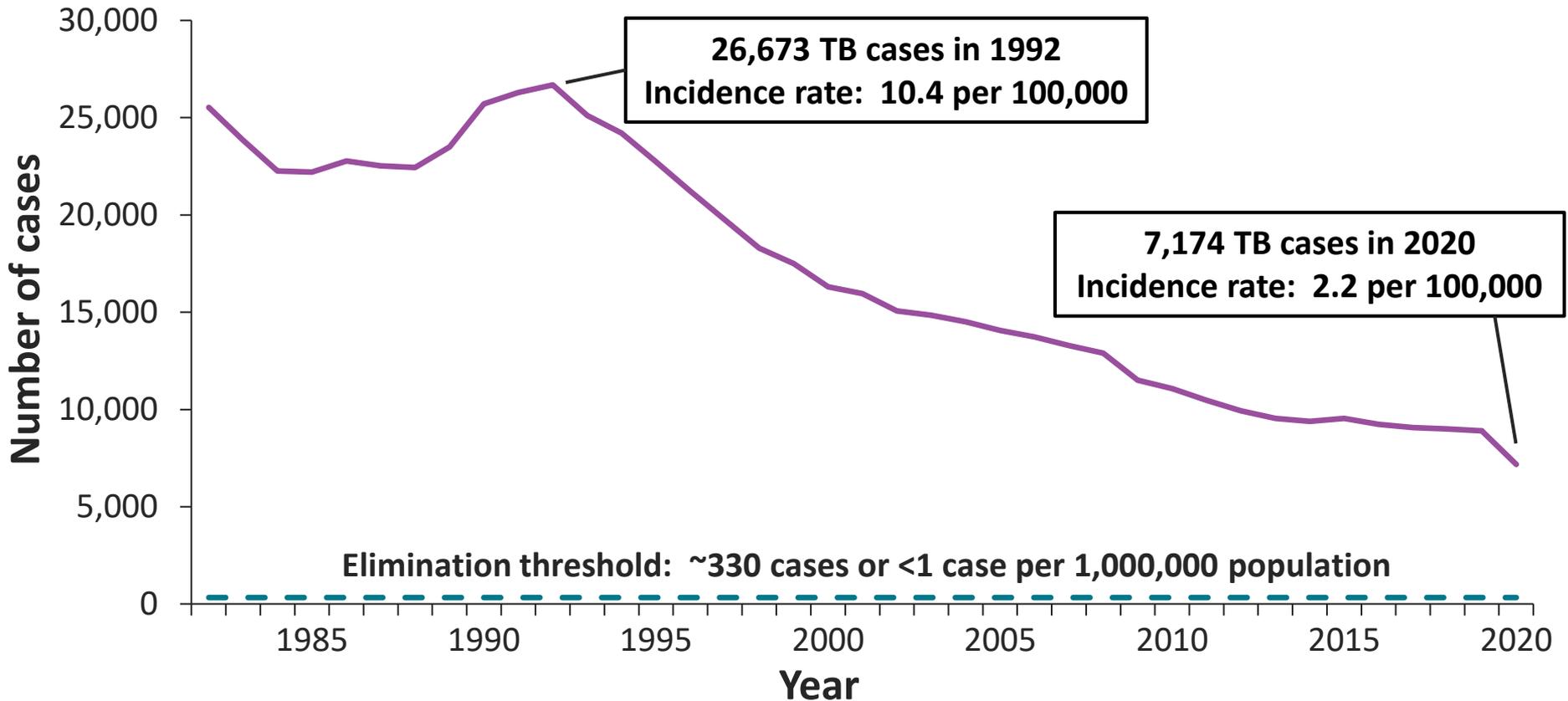




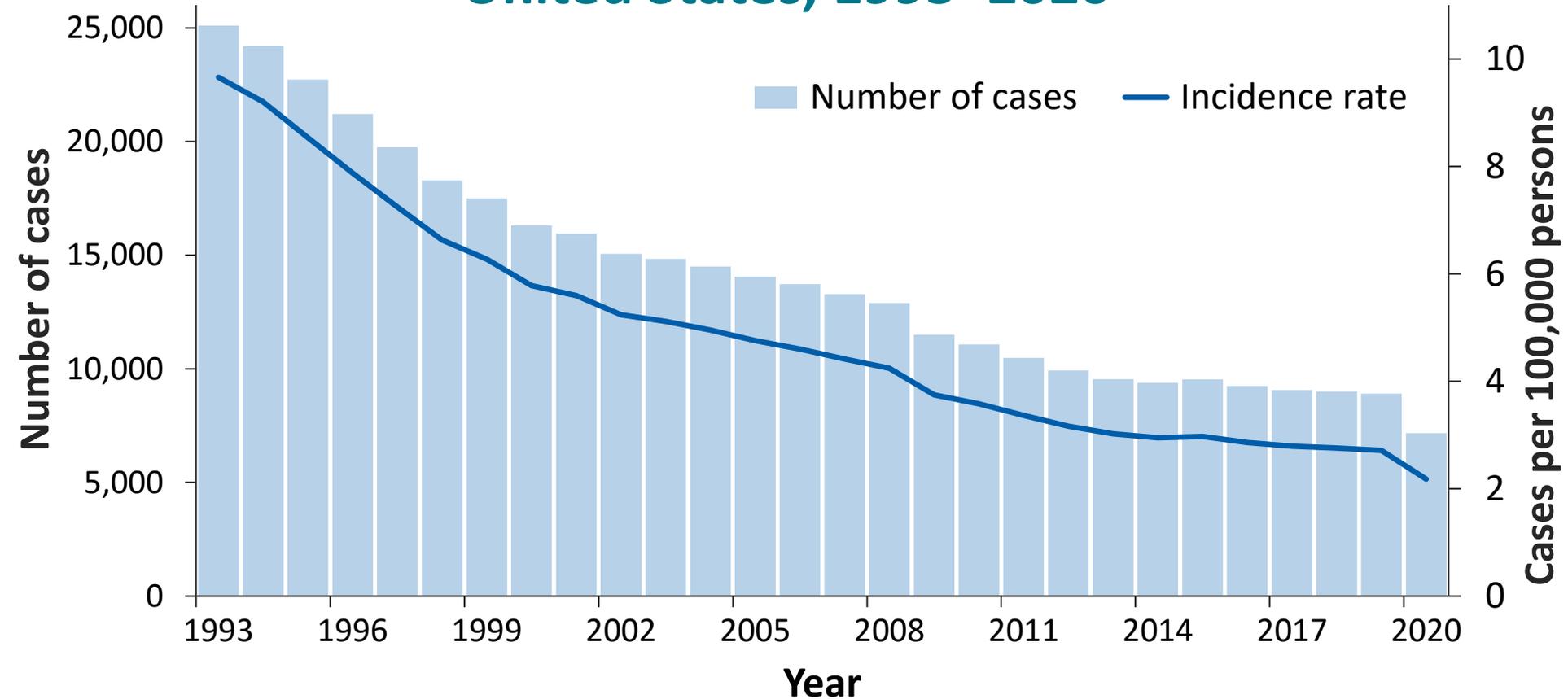
# Tuberculosis (TB) in the United States 1993–2020\*

Division of Tuberculosis Elimination  
National Tuberculosis Surveillance System

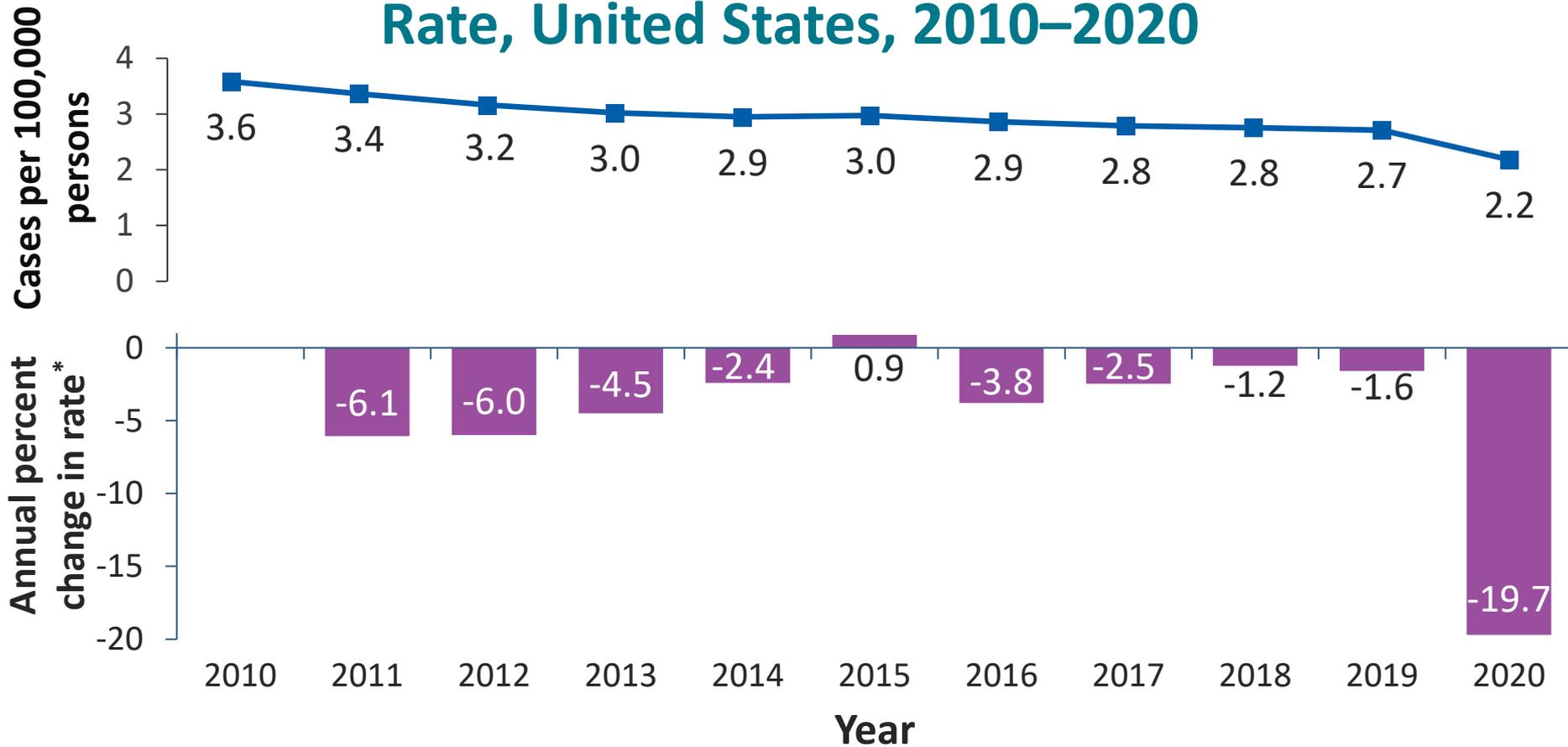
# Progress Towards TB Elimination, United States, 1982–2020



# TB Cases and Incidence Rates, United States, 1993–2020

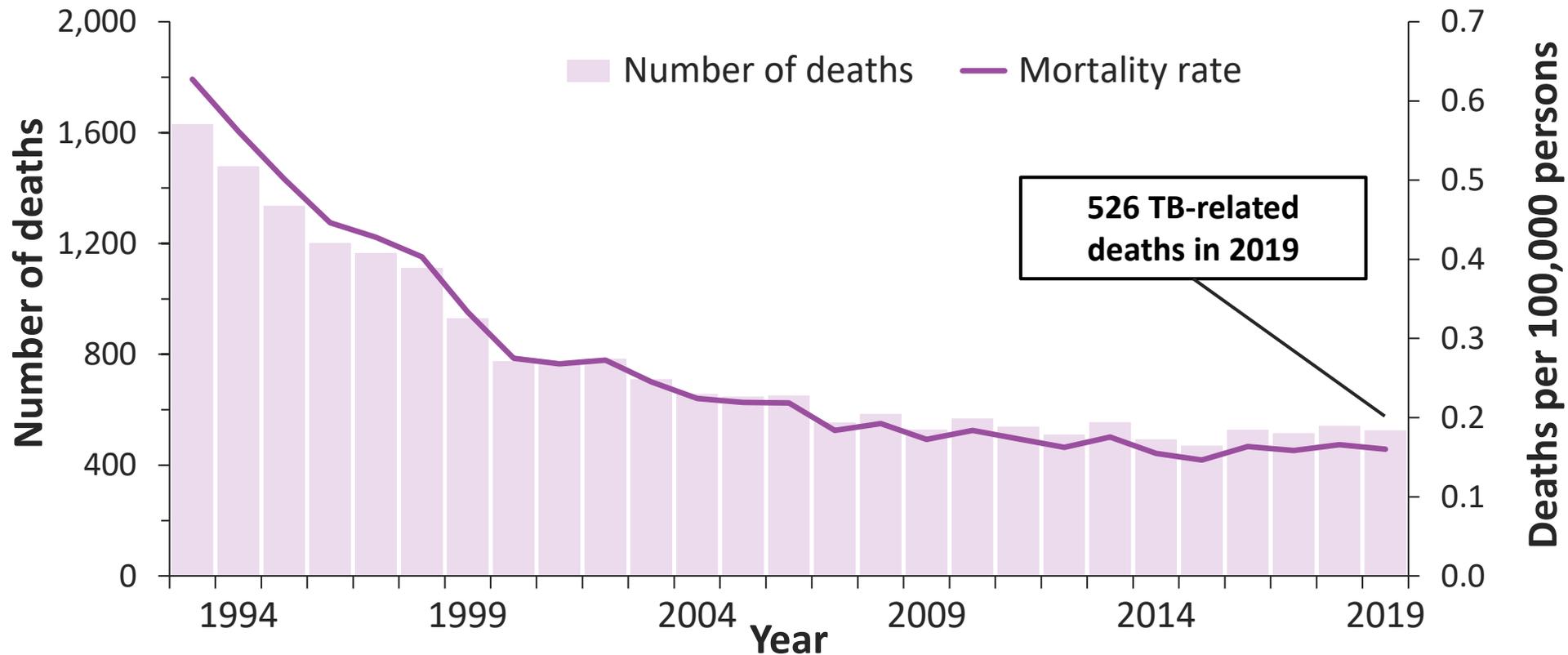


# TB Incidence Rates and Annual Percent Change in Rate, United States, 2010–2020



\*Annual percent change in rate based on unrounded data

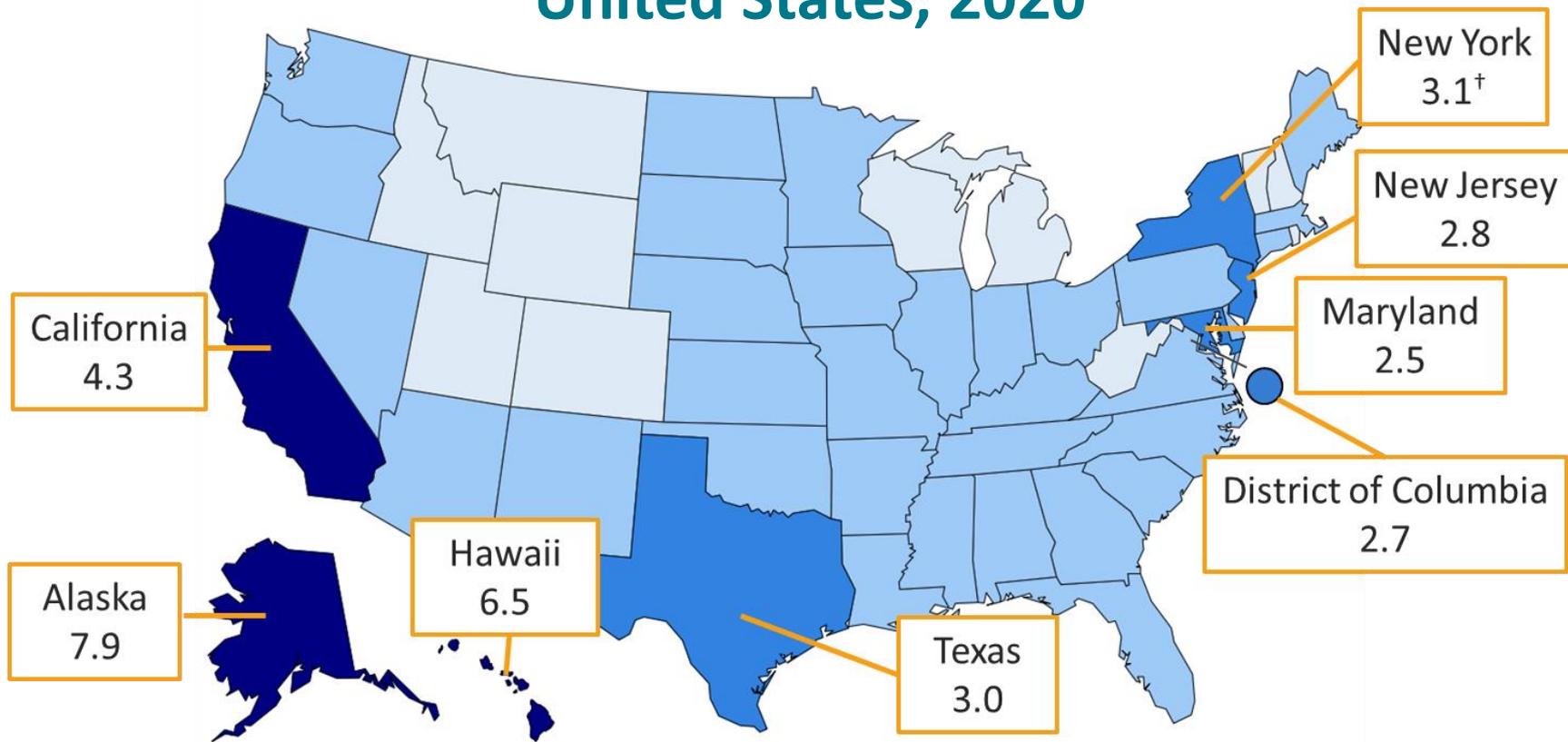
# TB-Related Deaths\* and Mortality Rates, United States, 1993–2019



\*National Vital Statistics System Underlying Cause of Death (based on deaths reported through 2019)

# TB Incidence Rates\* by Reporting Area

## United States, 2020



\*Cases per 100,000 persons

†Includes NYC

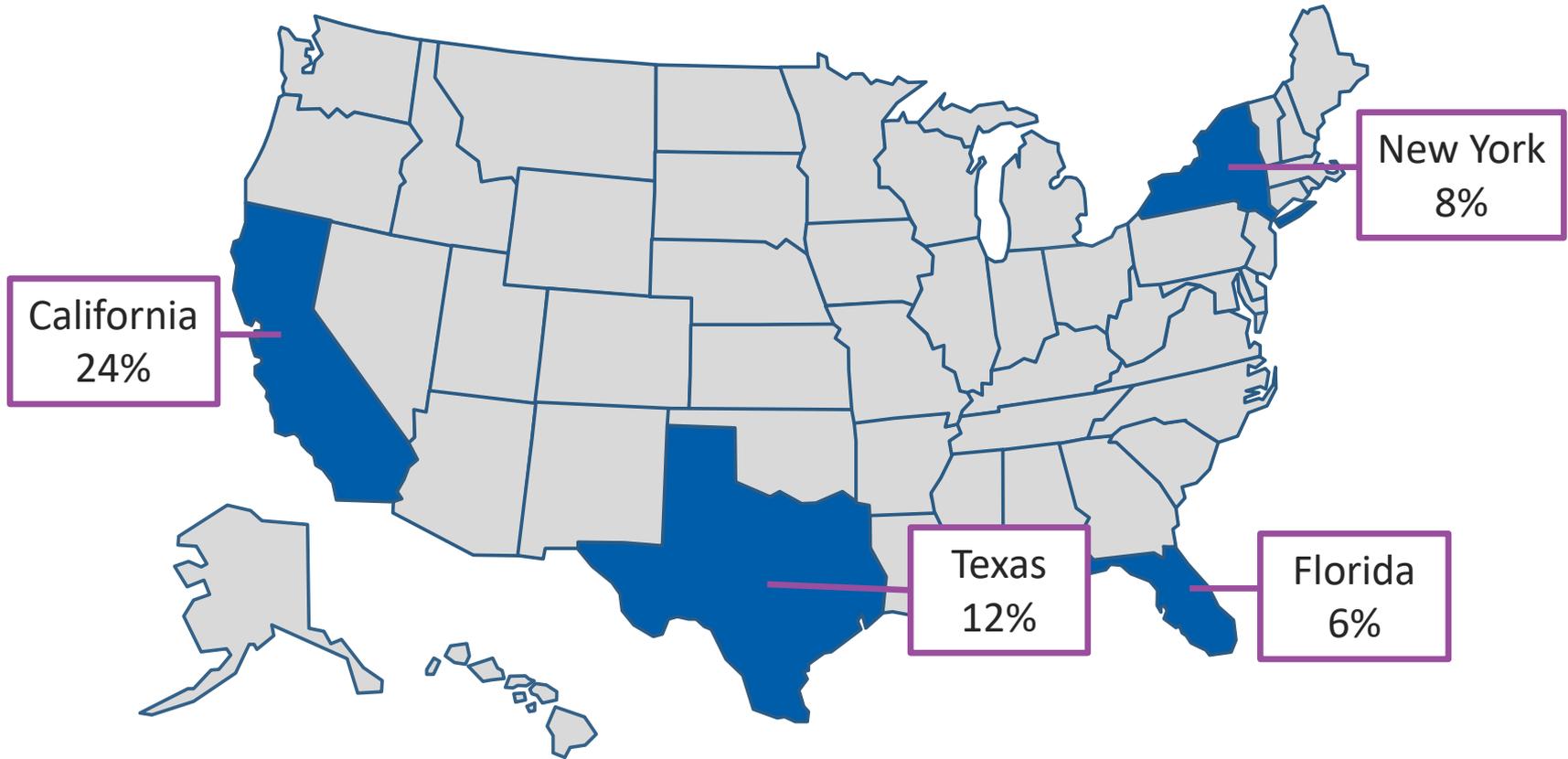
0 - 1.1

>1.1 to 2.2

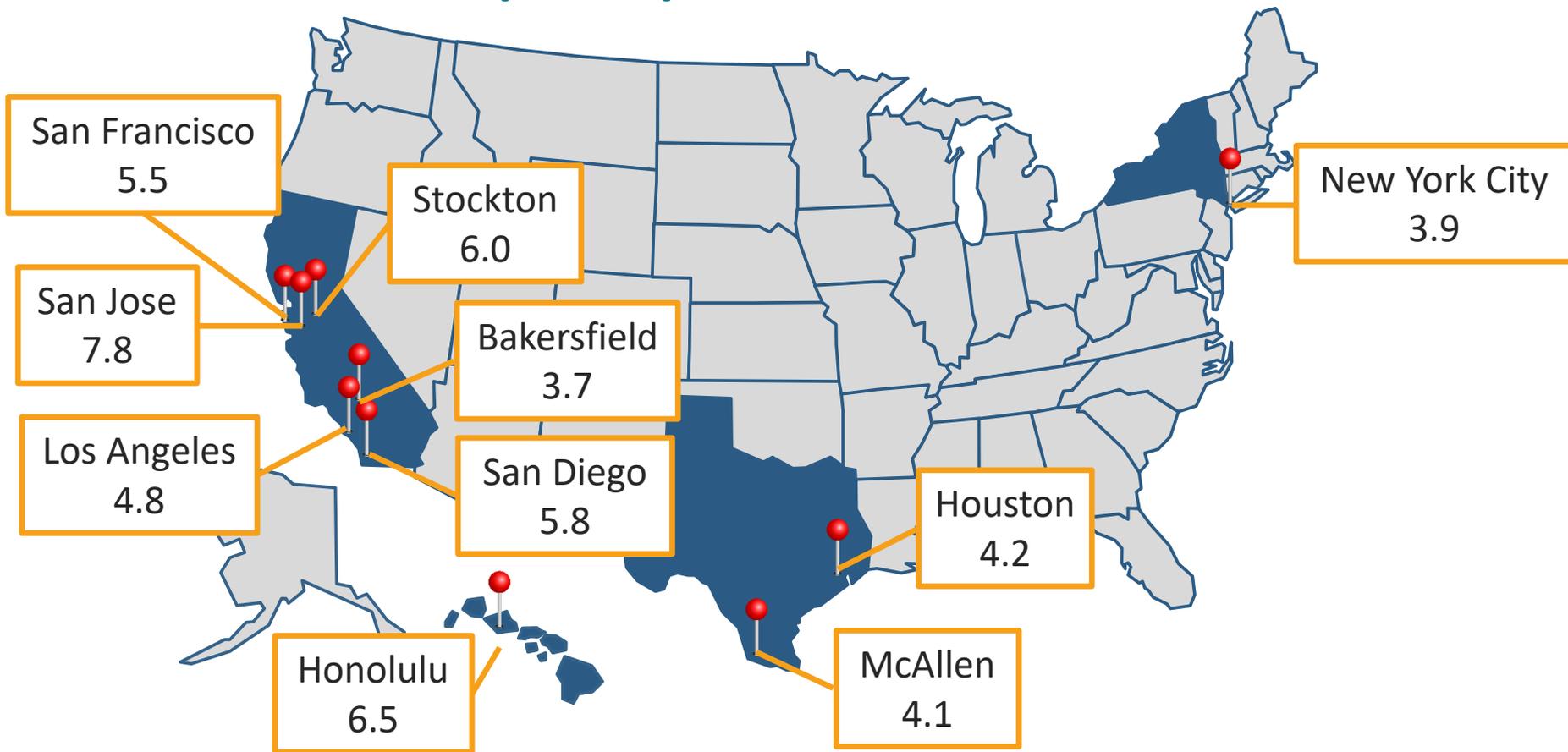
>2.2 to 4.3

>4.3

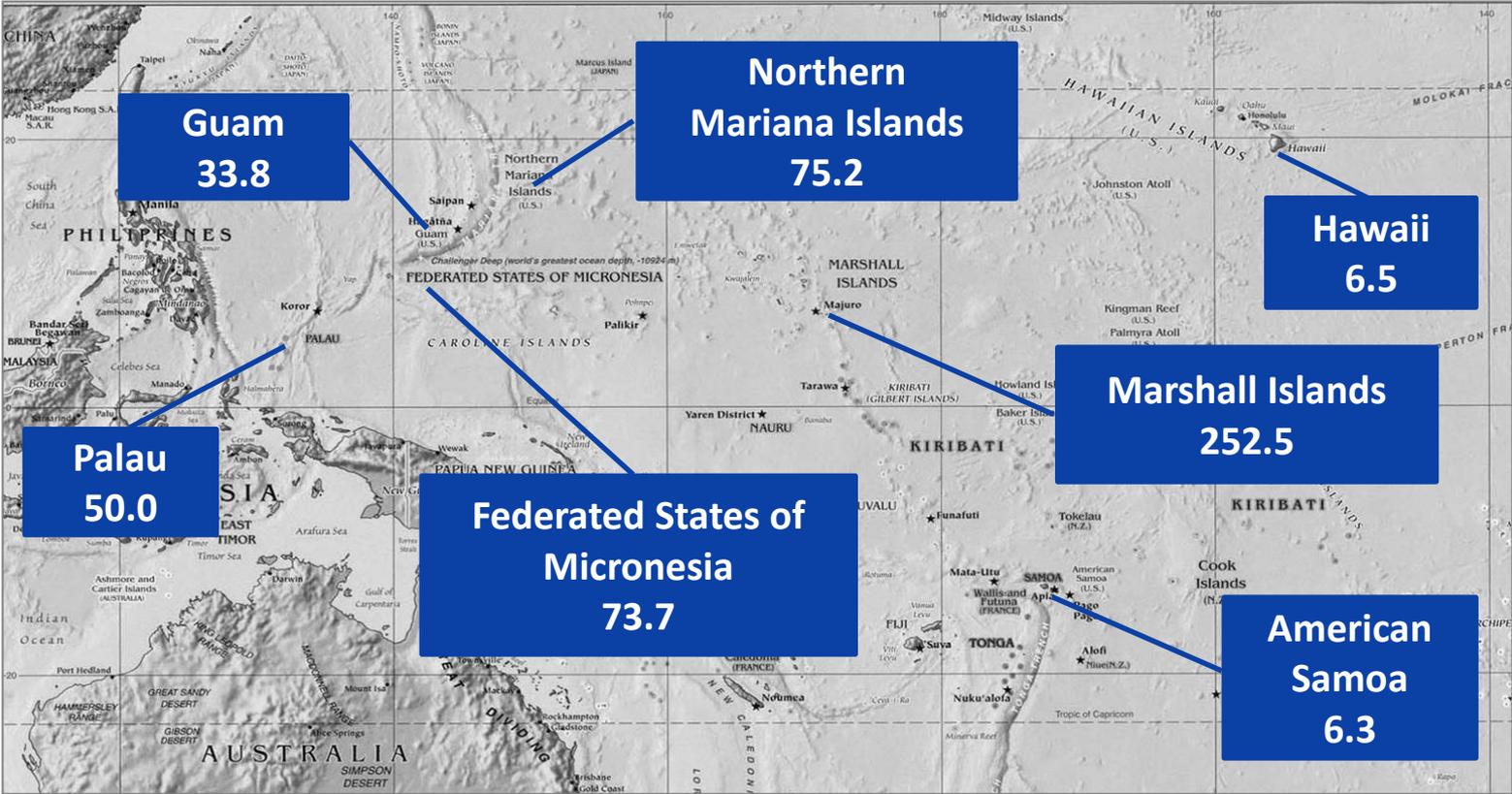
# Majority of TB Cases Occur in Four States, United States, 2020



# Top 10 TB Incidence Rates by Metropolitan Statistical Areas (MSAs), United States, 2020

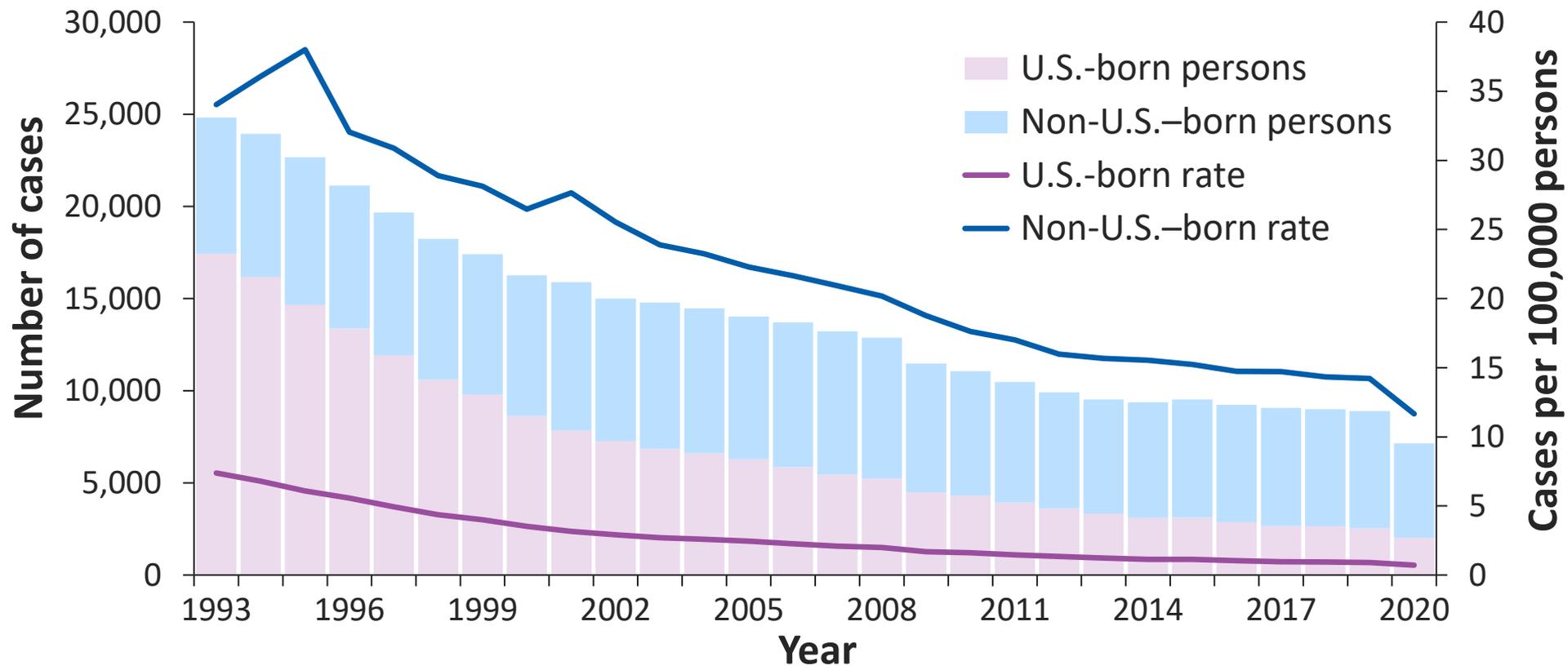


# TB Incidence Rates\* by U.S.-Affiliated Pacific Islands and Hawaii, 2020

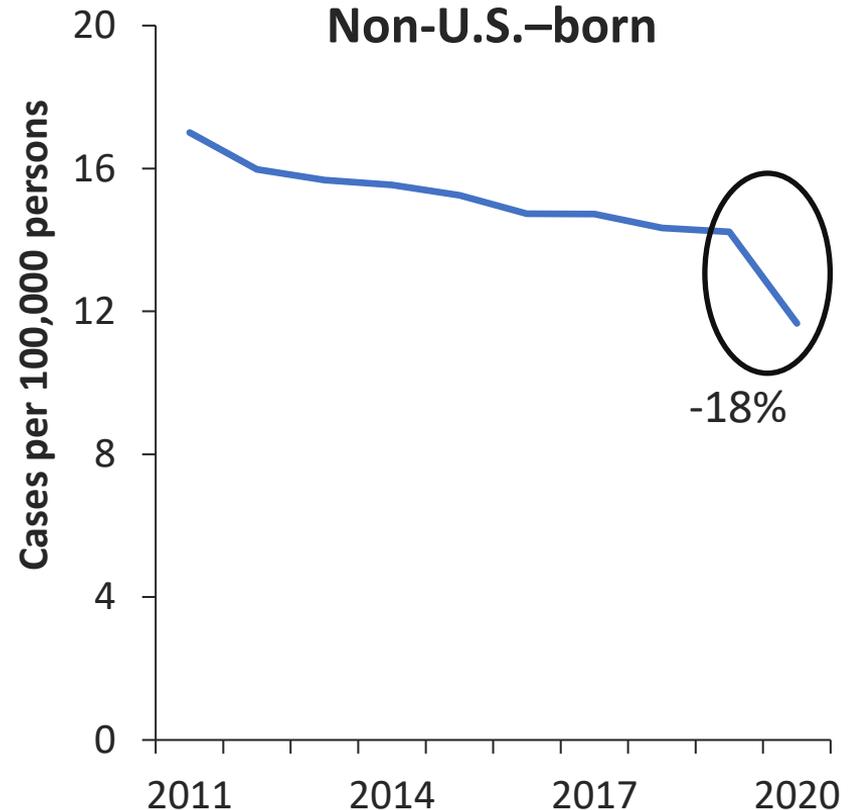
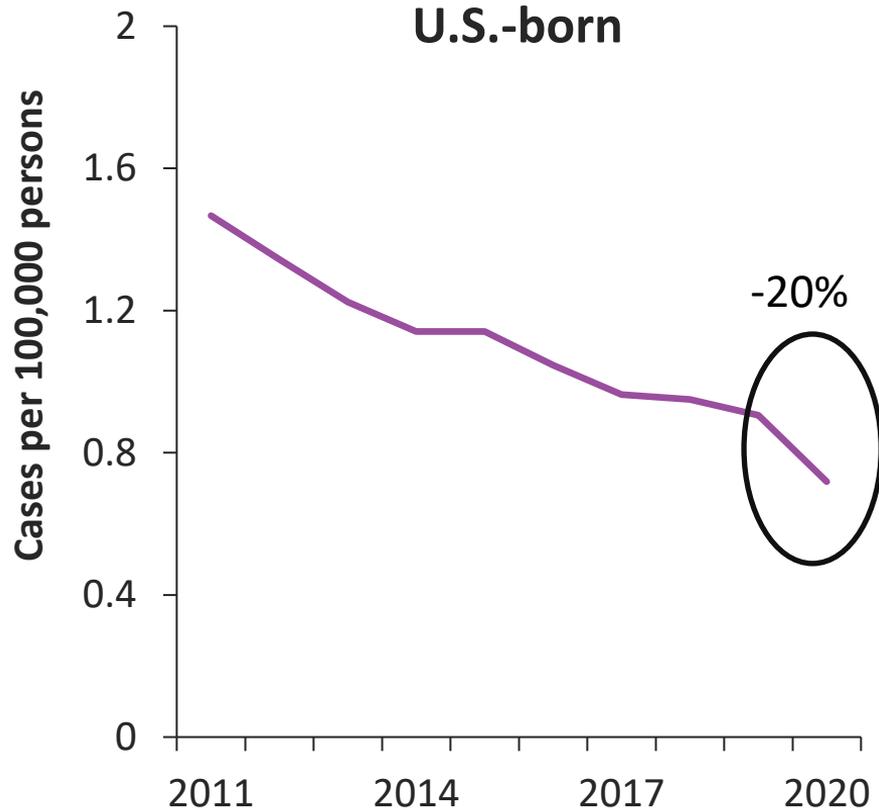


\*Cases per 100,000 persons

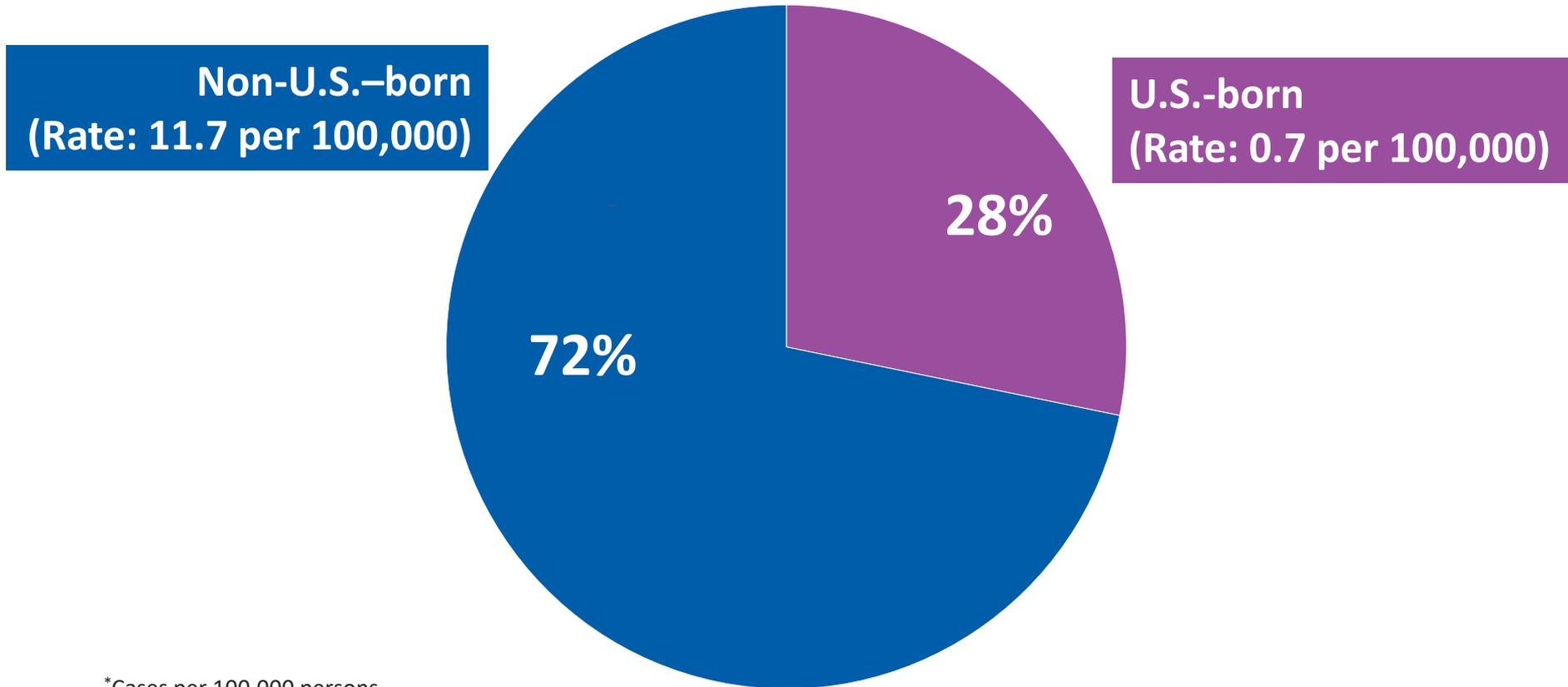
# TB Cases and Incidence Rates by Origin of Birth, United States, 1993–2020



# TB Incidence Rates by Origin of Birth, United States, 2011–2020

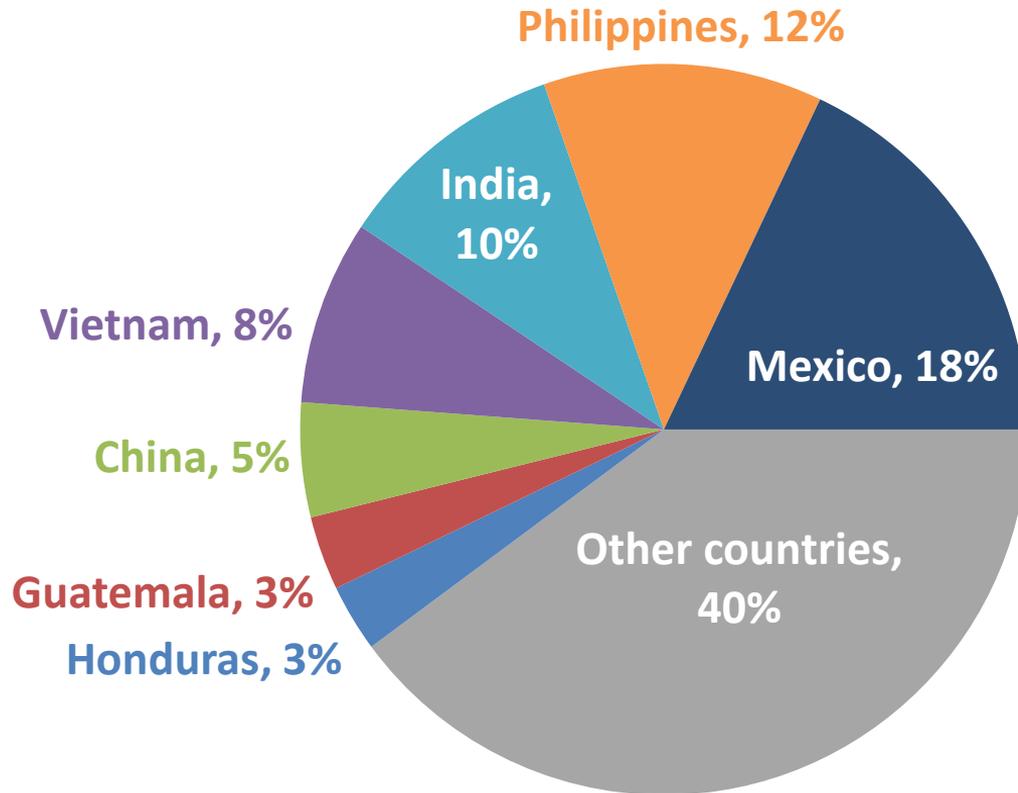


# TB Incidence Rates\* and Percentages by Origin of Birth, United States, 2020 (N=7,145)

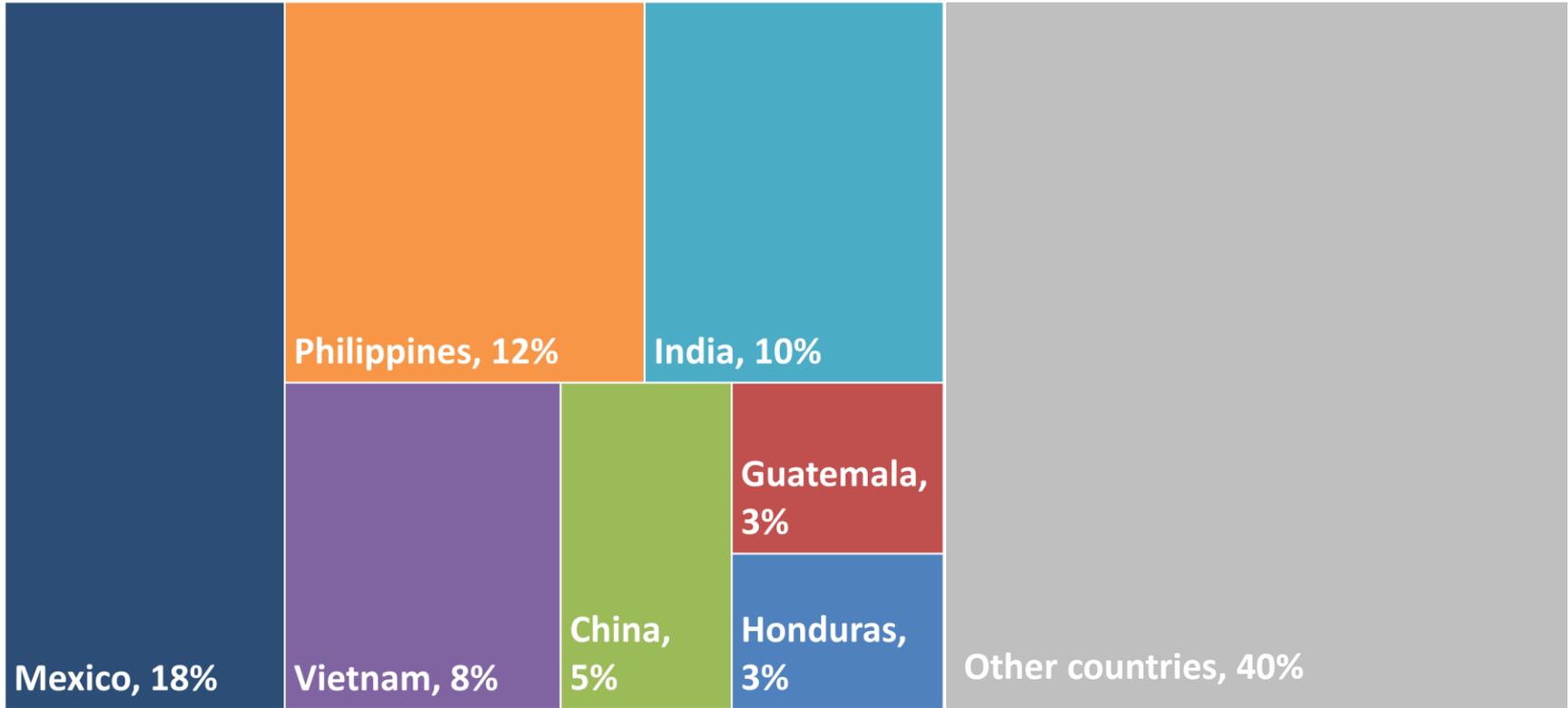


\*Cases per 100,000 persons

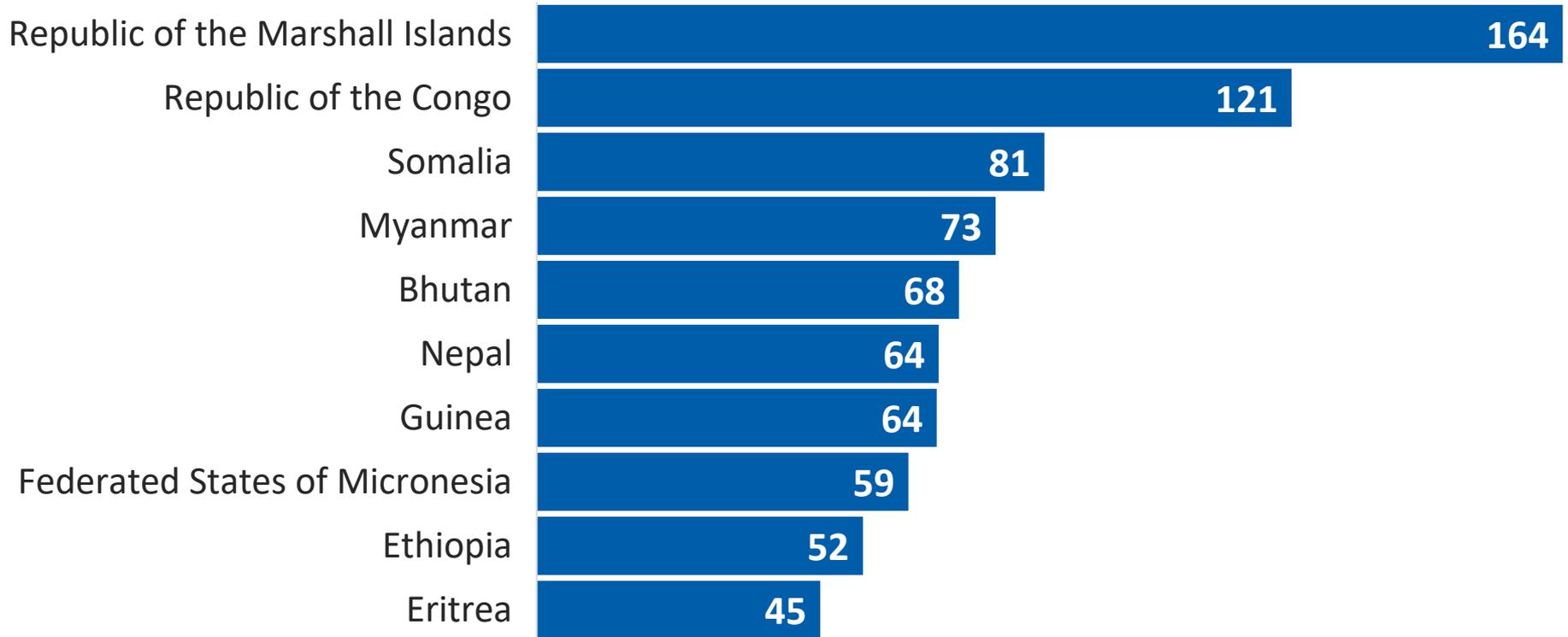
# Top Countries of Birth Among Non-U.S.–born Persons with TB, United States, 2020 (N=5,127)



# Top Countries of Birth\* Among Non-U.S.–born Persons with Highest Percentage of TB, United States, 2020 (N=5,127)



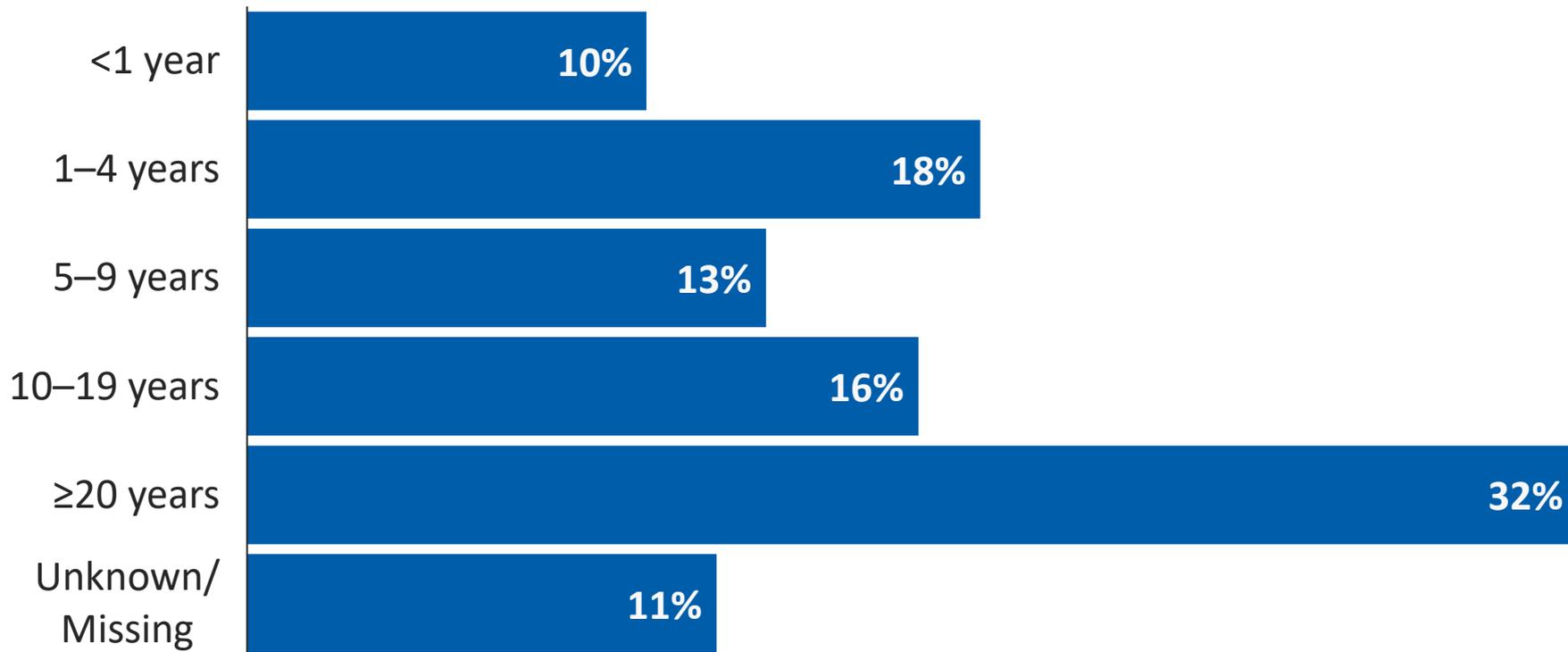
# Top 10 TB Incidence Rates,\* by Country of Birth,† United States, 2016–2020



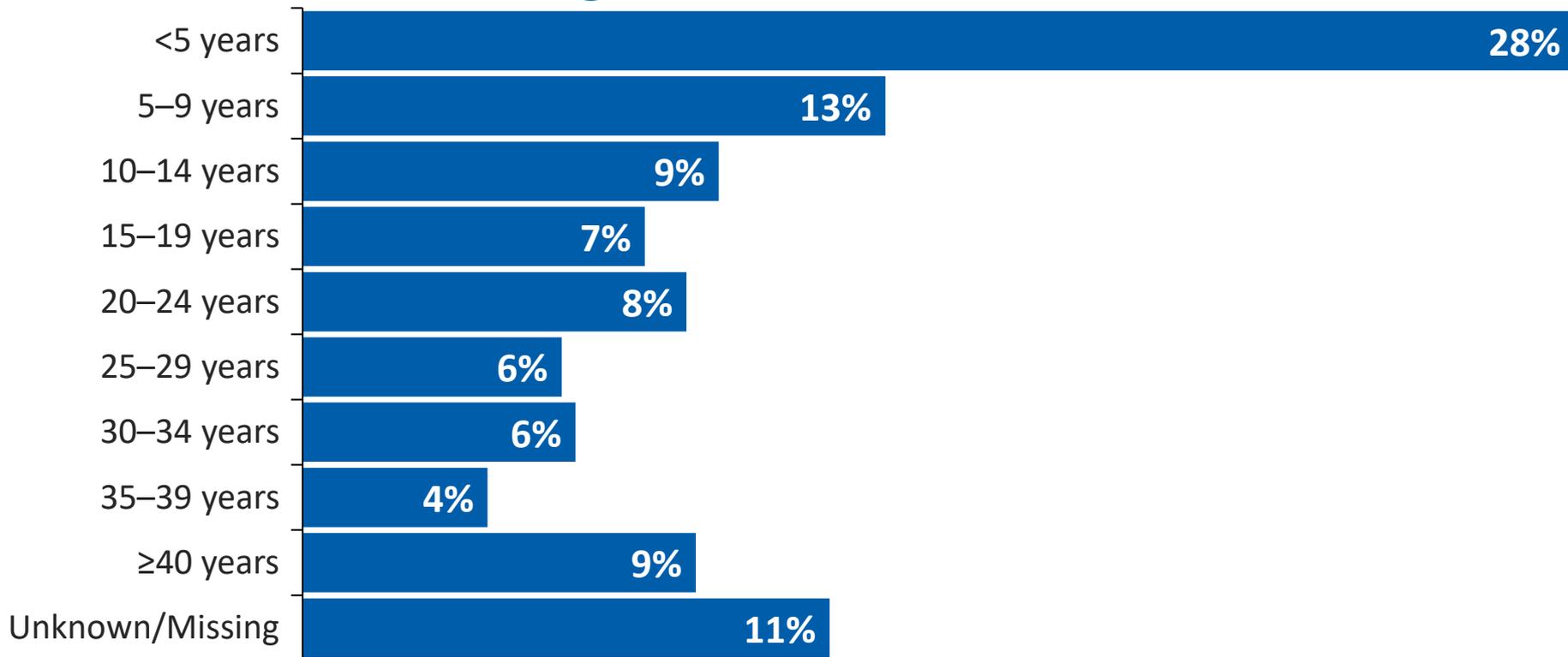
\* Cases per 100,000 persons

† Populations for the countries of birth shown were selected based on their ranked 5-year rate of TB cases by country of birth in the United States.

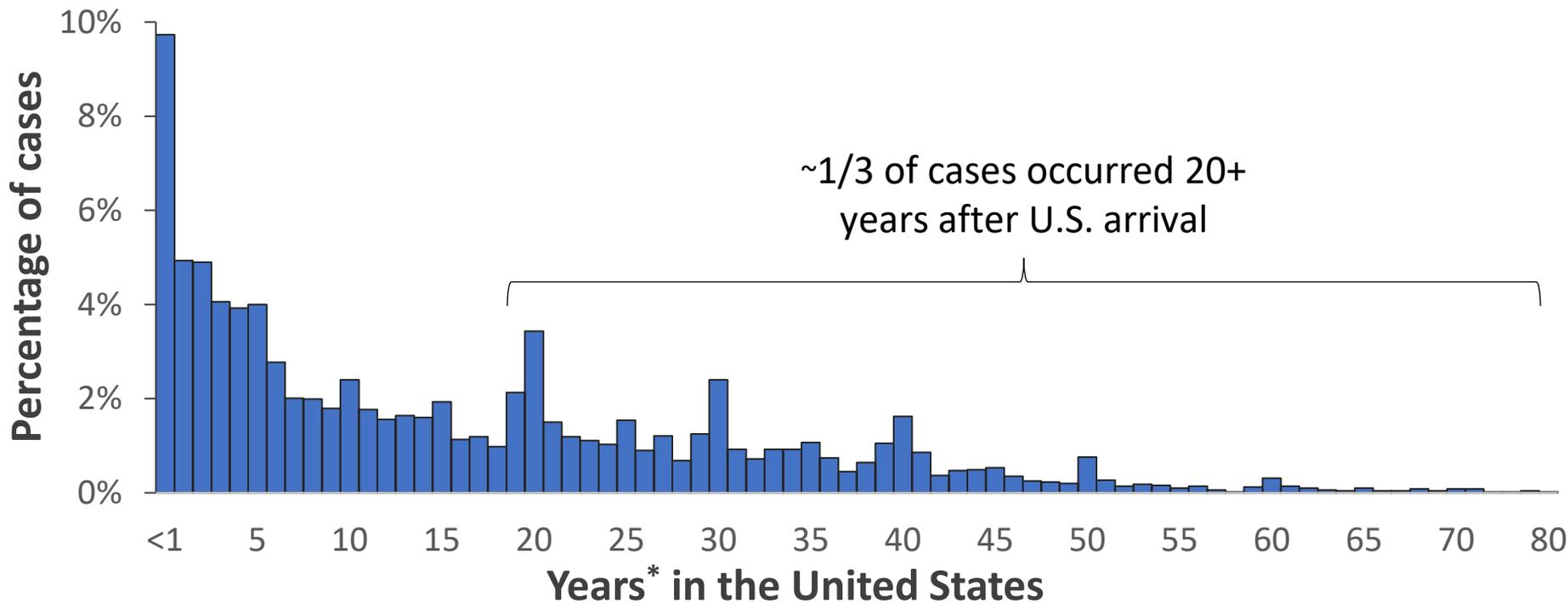
# Percentage of TB Cases Among Non-U.S.–born Persons by Years Since Initial Arrival in the United States at Diagnosis, 2020 (N=5,127)



# Percentage of TB Cases Among Non-U.S.–born Persons by Years Since Initial Arrival in the United States at Diagnosis, 2020 (N=5,127)

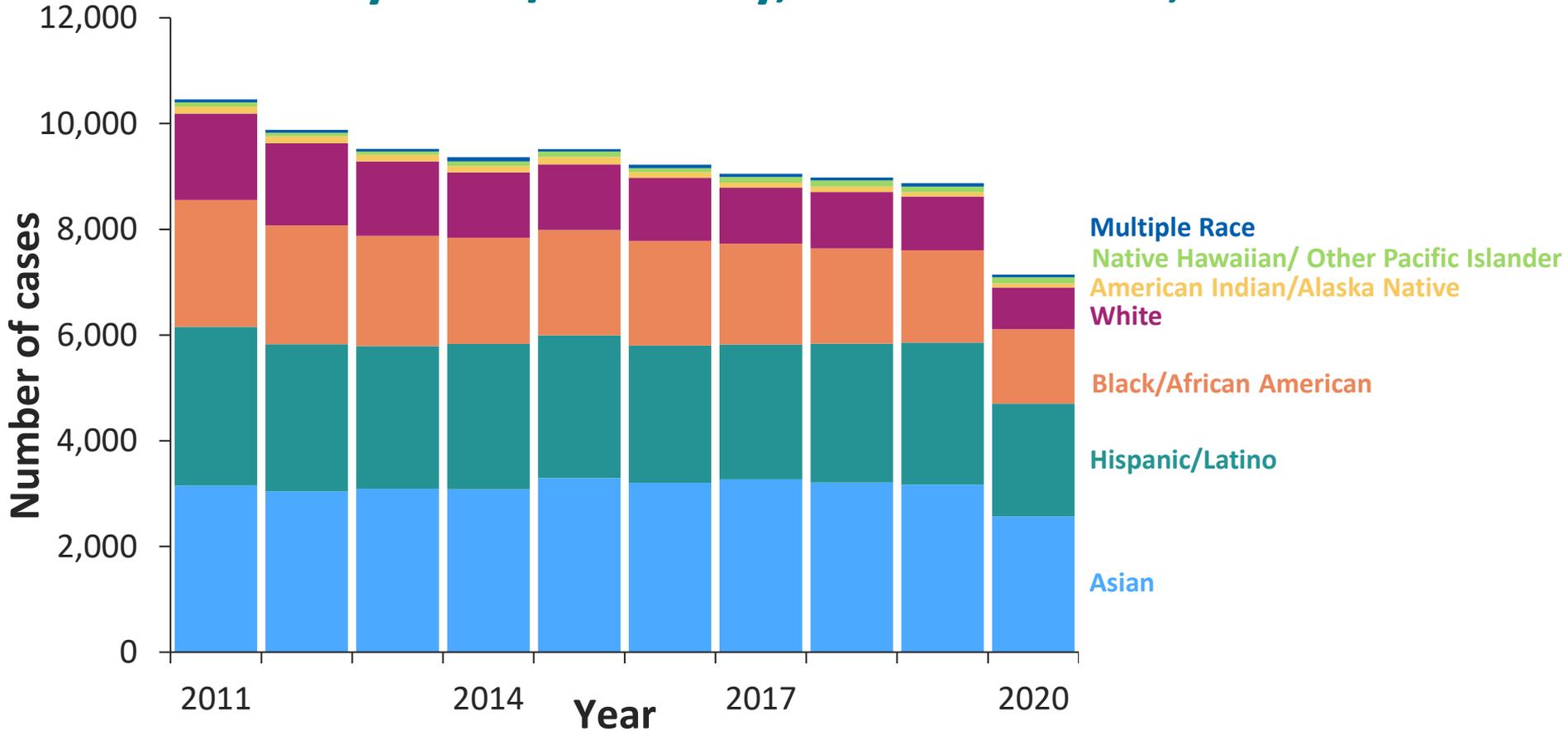


# Percentage of TB Cases Among Non-U.S.–born Persons by Year Since Initial Arrival in the United States at Diagnosis, 2020 (N=5,127)



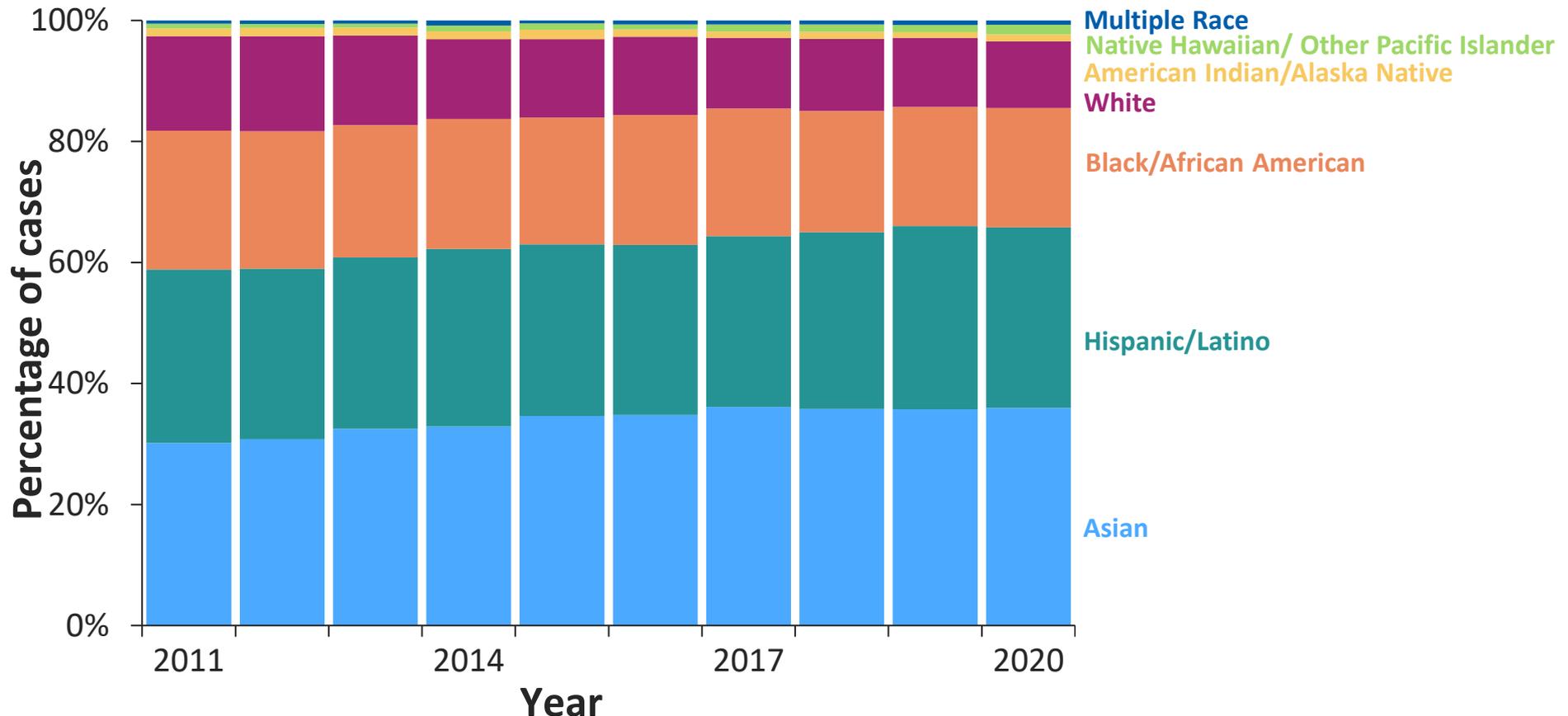
\* Years since arrival was missing/unknown for 585 cases (11.4%).

# TB Cases by Race/Ethnicity,\* United States, 2011–2020



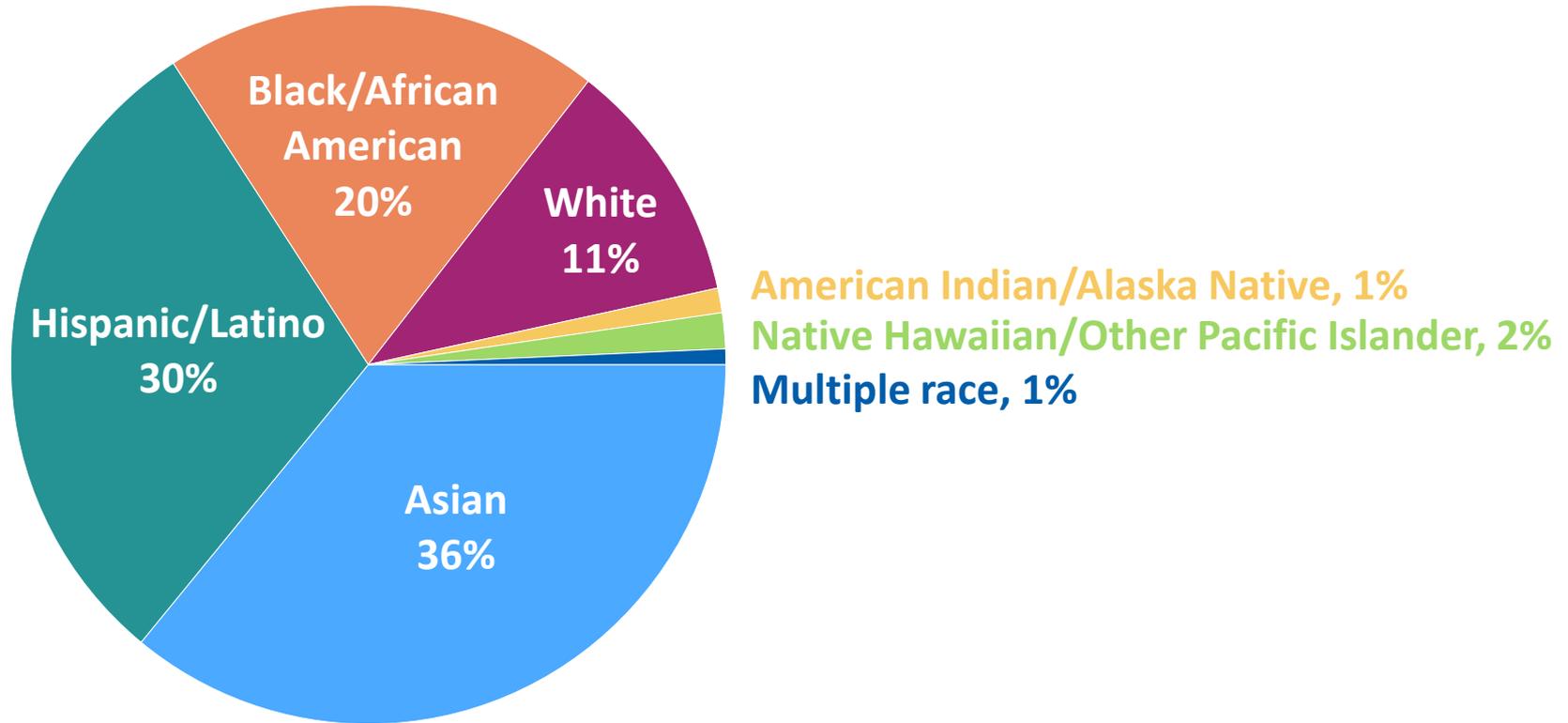
\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

# TB Cases by Race/Ethnicity,\* United States, 2011–2020



\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

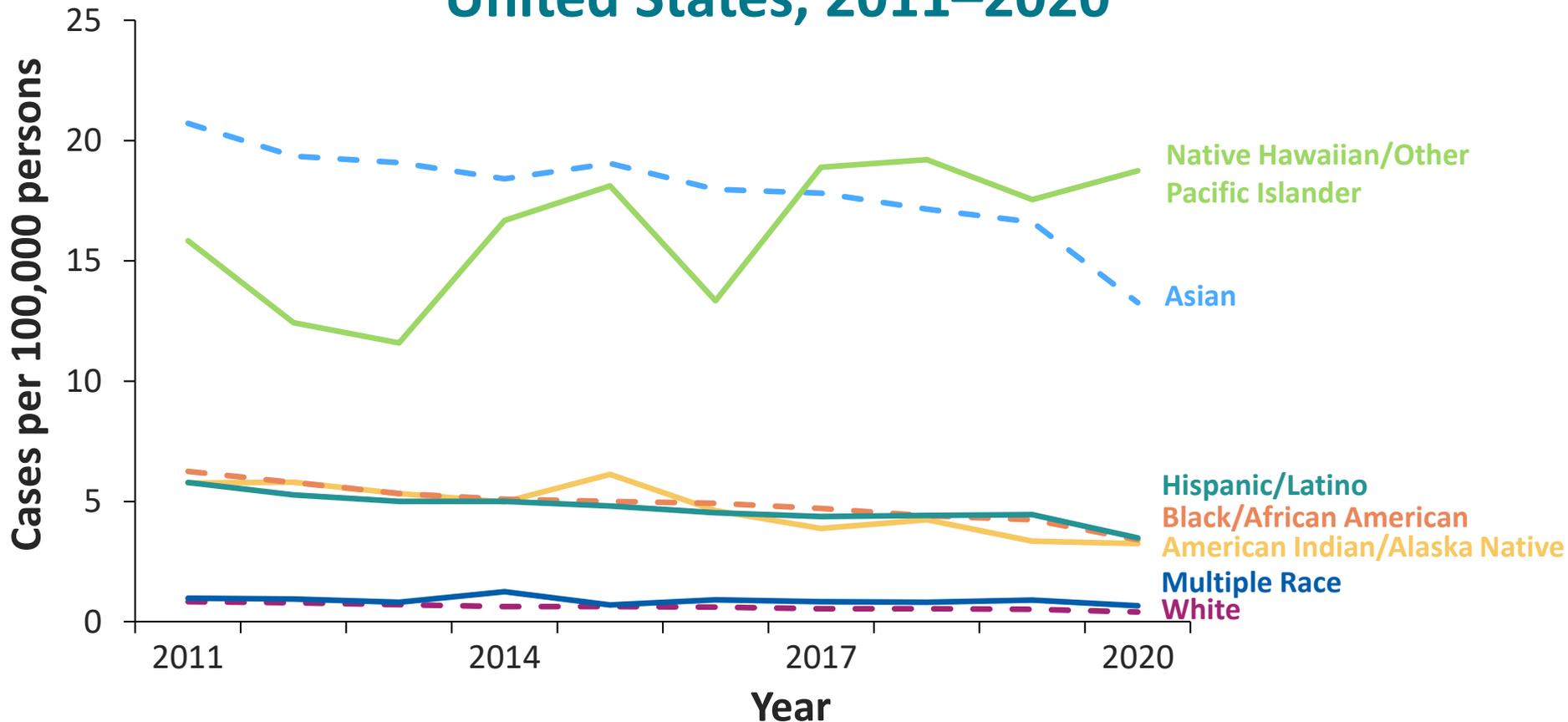
# Percentage of TB Cases by Race/Ethnicity,<sup>\*</sup> United States, 2020 (N=7,174)<sup>†</sup>



<sup>\*</sup>All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

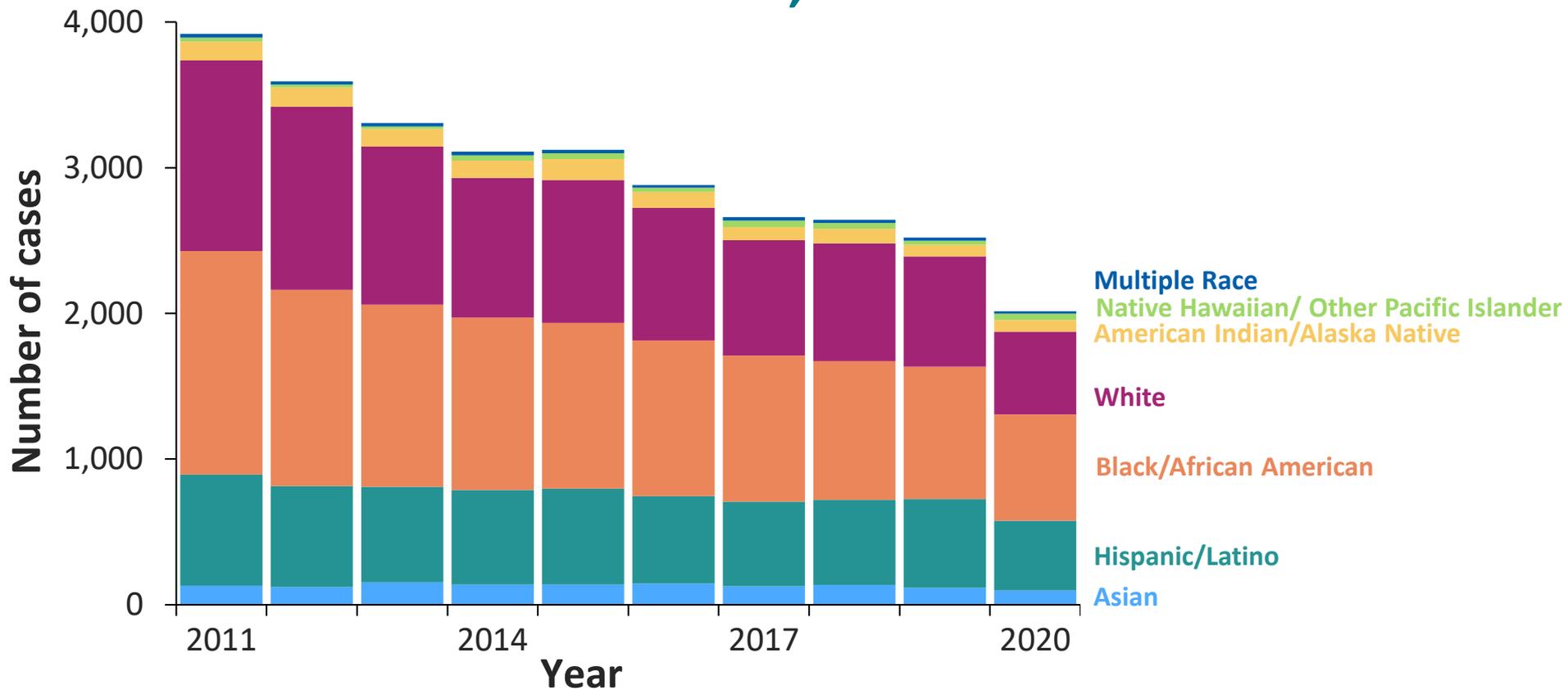
<sup>†</sup>Percentages are rounded. Percentages of unknowns/missing are <1% and are not displayed in graph.

# TB Incidence Rates by Race/Ethnicity,\* United States, 2011–2020



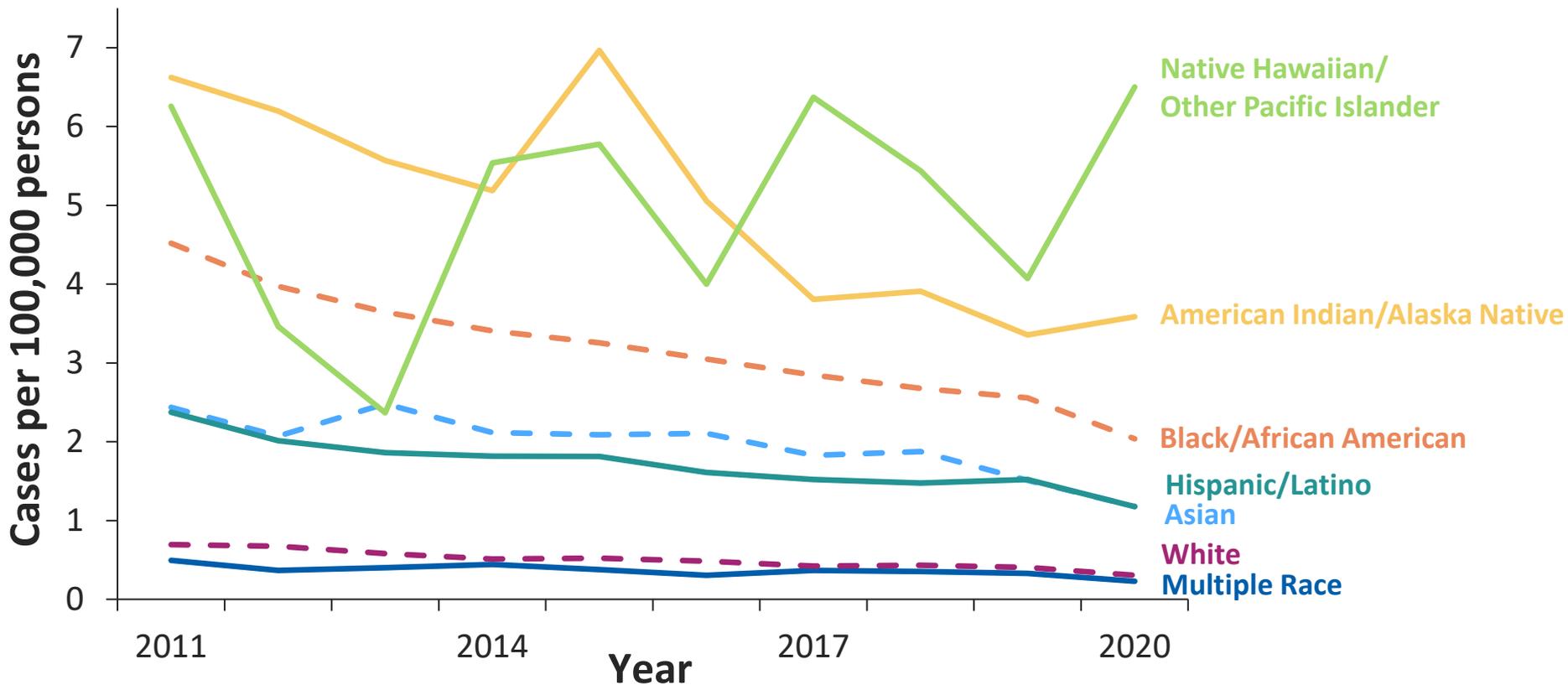
\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

# TB Cases Among U.S.-born Persons by Race/Ethnicity,\* United States, 2011–2020



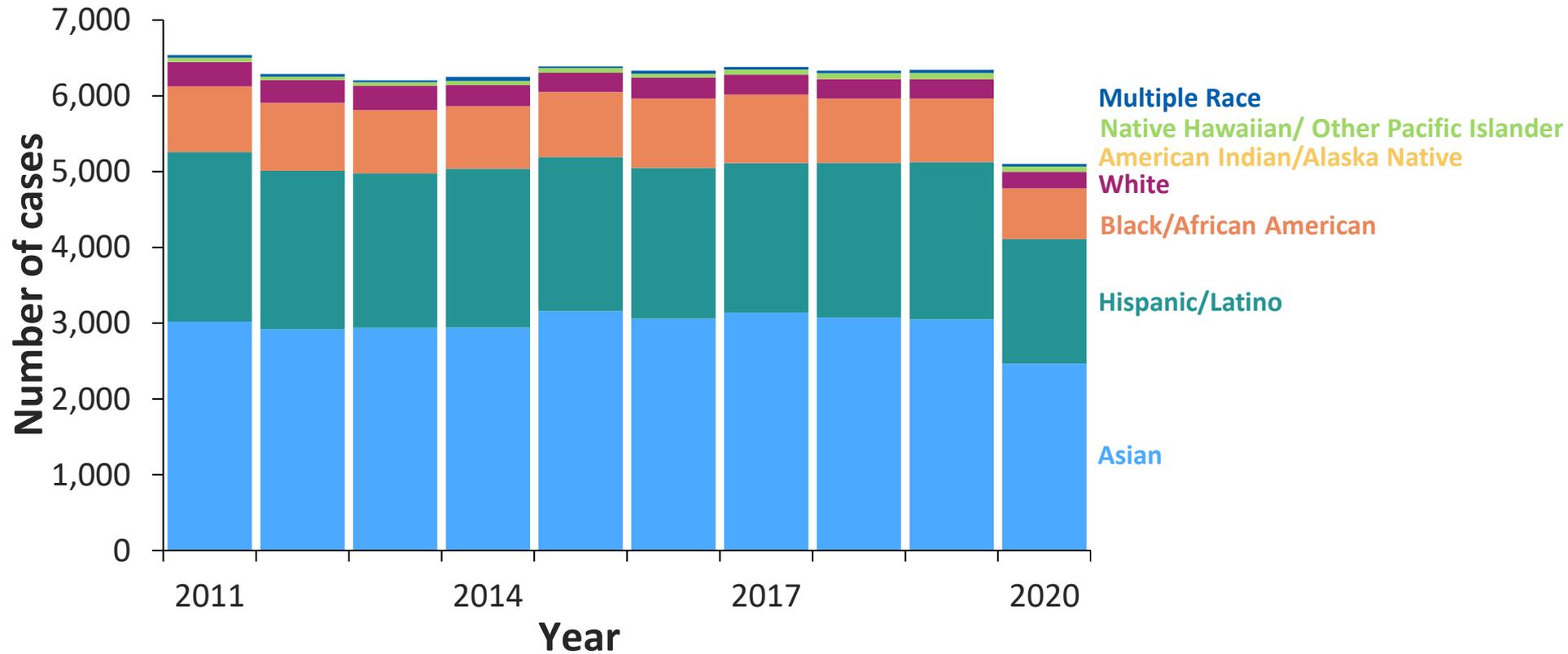
\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

# TB Incidence Rates Among U.S.-born Persons by Race/Ethnicity,\* United States, 2011–2020



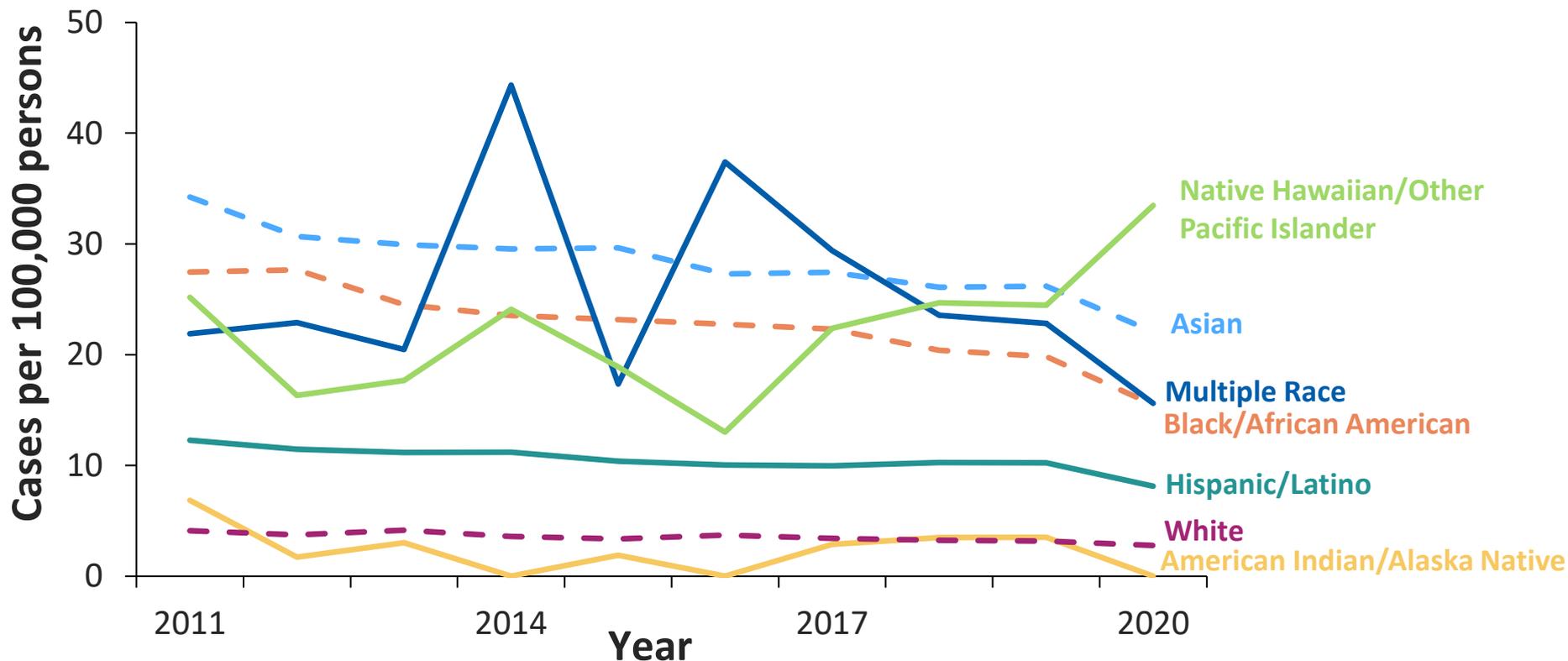
\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

# TB Cases Among Non-U.S.–born Persons by Race/Ethnicity,\* United States, 2011–2020



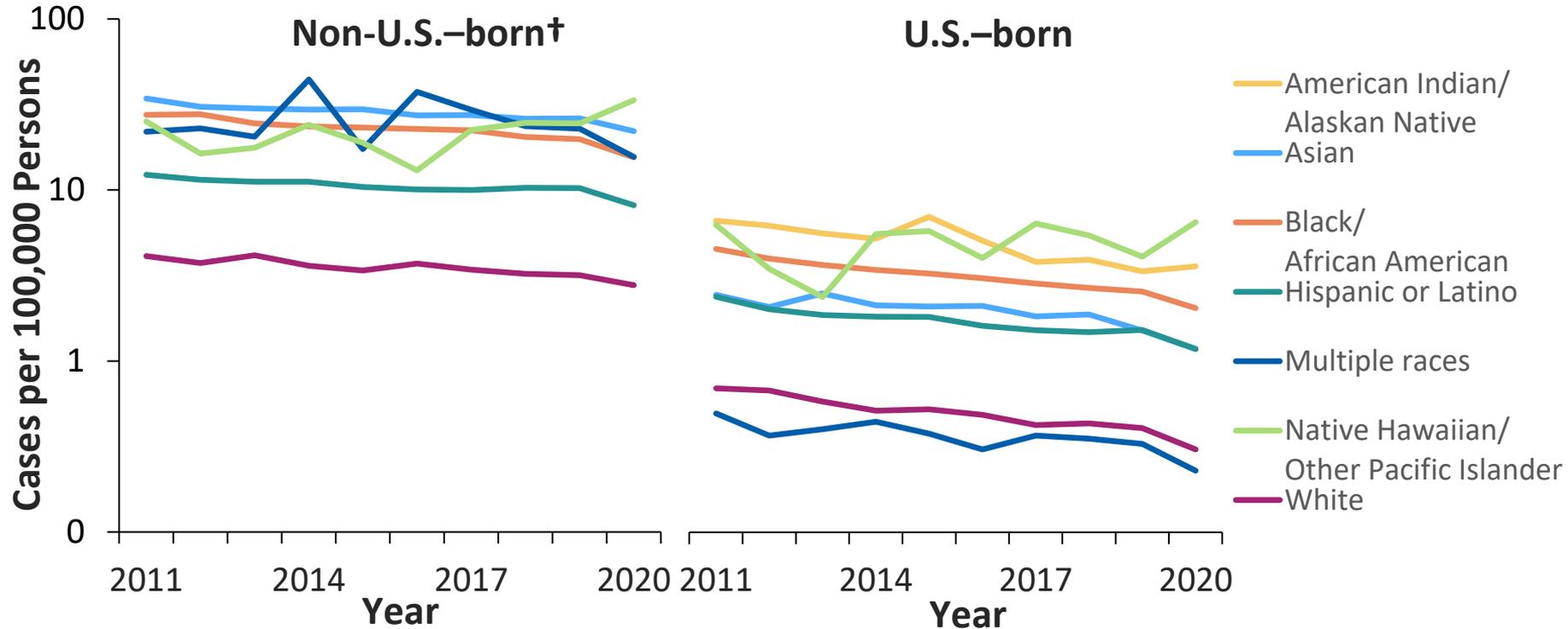
\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

# TB Incidence Rates Among Non-U.S.–born Persons by Race/Ethnicity,\* United States, 2011–2020



\*All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

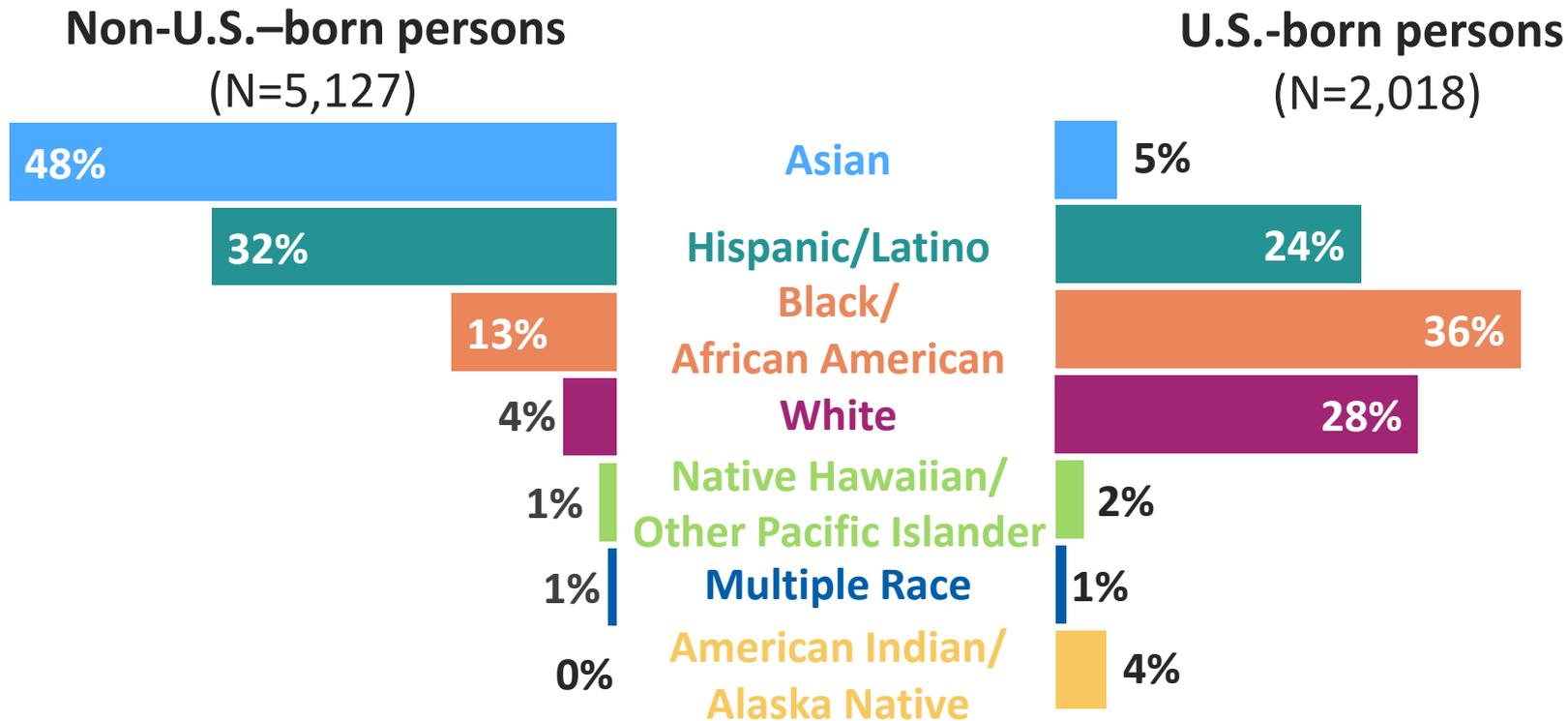
# TB Incidence Rates Among Non-U.S.-born and U.S.-born Persons by Race/Ethnicity,\* United States, 2011–2020



\* All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

† Non-U.S.-born American Indian/Alaska Native are not displayed because some years have zero cases, which cannot be displayed in a log-scale graph.

# Percentage of TB Cases by Origin and Race/Ethnicity,<sup>\*</sup> United States, 2020<sup>†</sup>



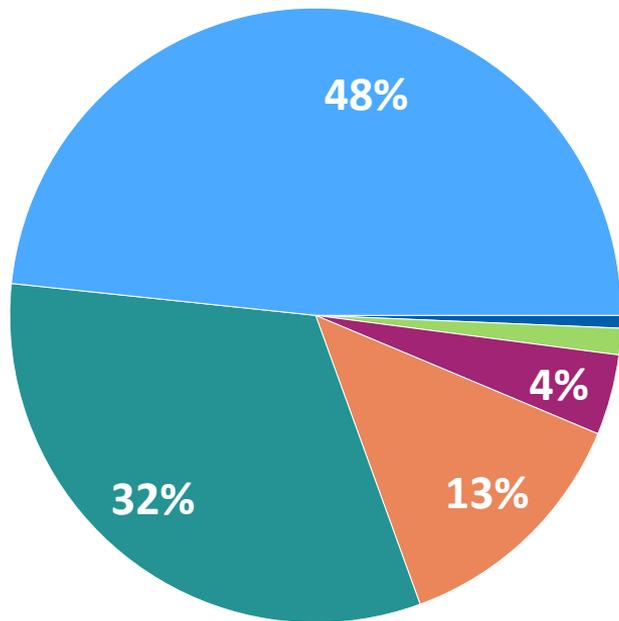
<sup>\*</sup> All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

<sup>†</sup> Percentages are rounded. Percentages of unknowns/missing are <1% and are not displayed in graphs.

# Percentage of TB Cases by Origin and Race/Ethnicity,<sup>\*</sup> United States, 2020<sup>†</sup>

Non-U.S.–born persons<sup>§</sup>

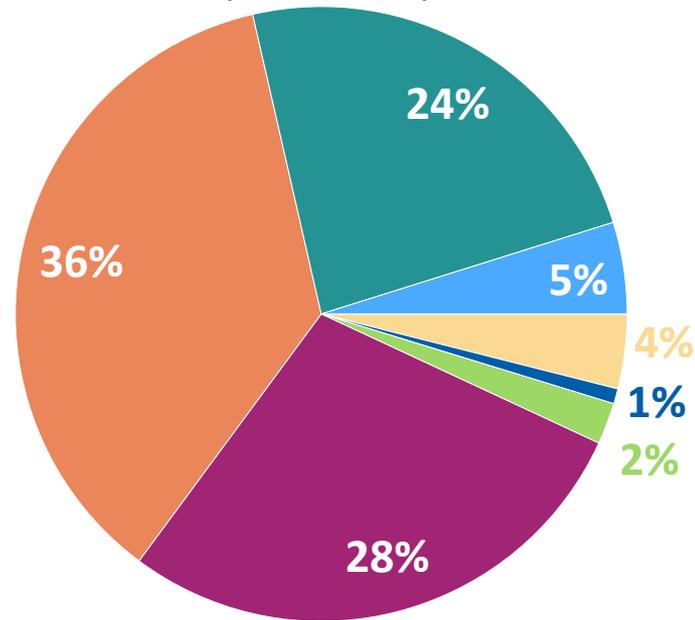
(N=5,127)



Asian  
Hispanic/Latino  
Black/African American  
American Indian/Alaska Native<sup>§</sup>  
White  
Multiple Race  
Native Hawaiian/Other Pacific Islander

U.S.-born persons

(N=2,018)



<sup>\*</sup> All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic or Latino origin.

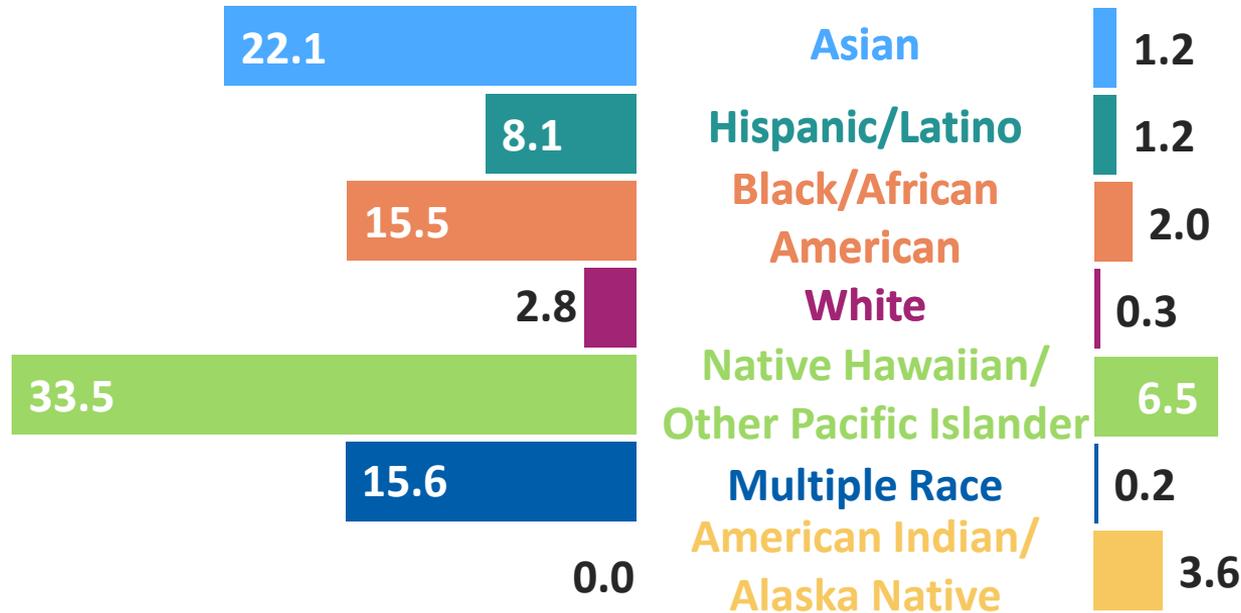
<sup>†</sup> Percentages are rounded. Percentages of unknowns/missing are <1% and are not displayed in graphs.

<sup>§</sup> American Indian/Alaska Native accounted for no cases among non-U.S.–born persons (not visible).

# TB Incidence Rates\* by Origin and Race/Ethnicity,† United States, 2020

Non-U.S.–born persons  
(N=5,127)

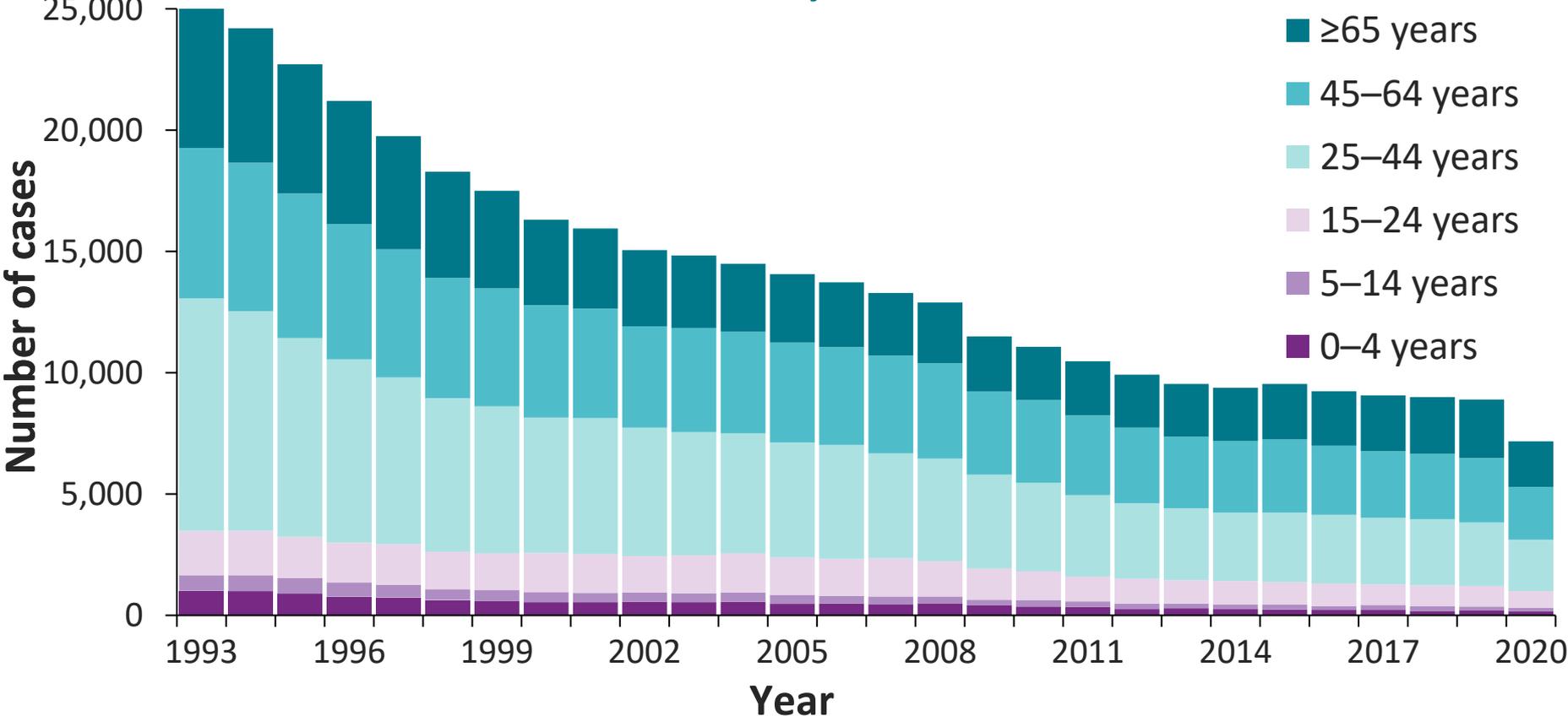
U.S.-born persons  
(N=2,018)



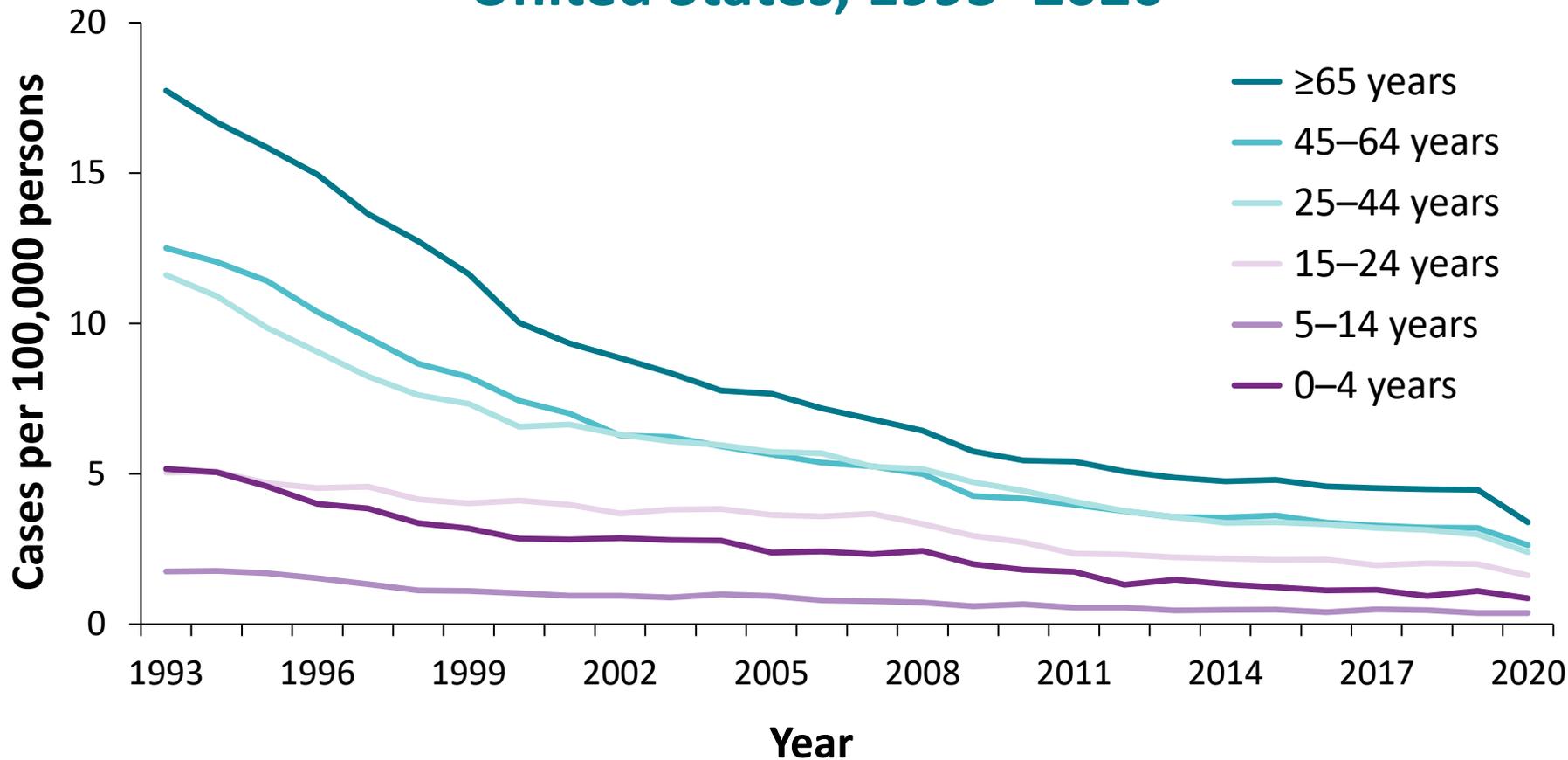
\*Cases per 100,000 persons

†All races are non-Hispanic; multiple race indicates two or more races reported for a person but does not include persons of Hispanic/Latino origin.

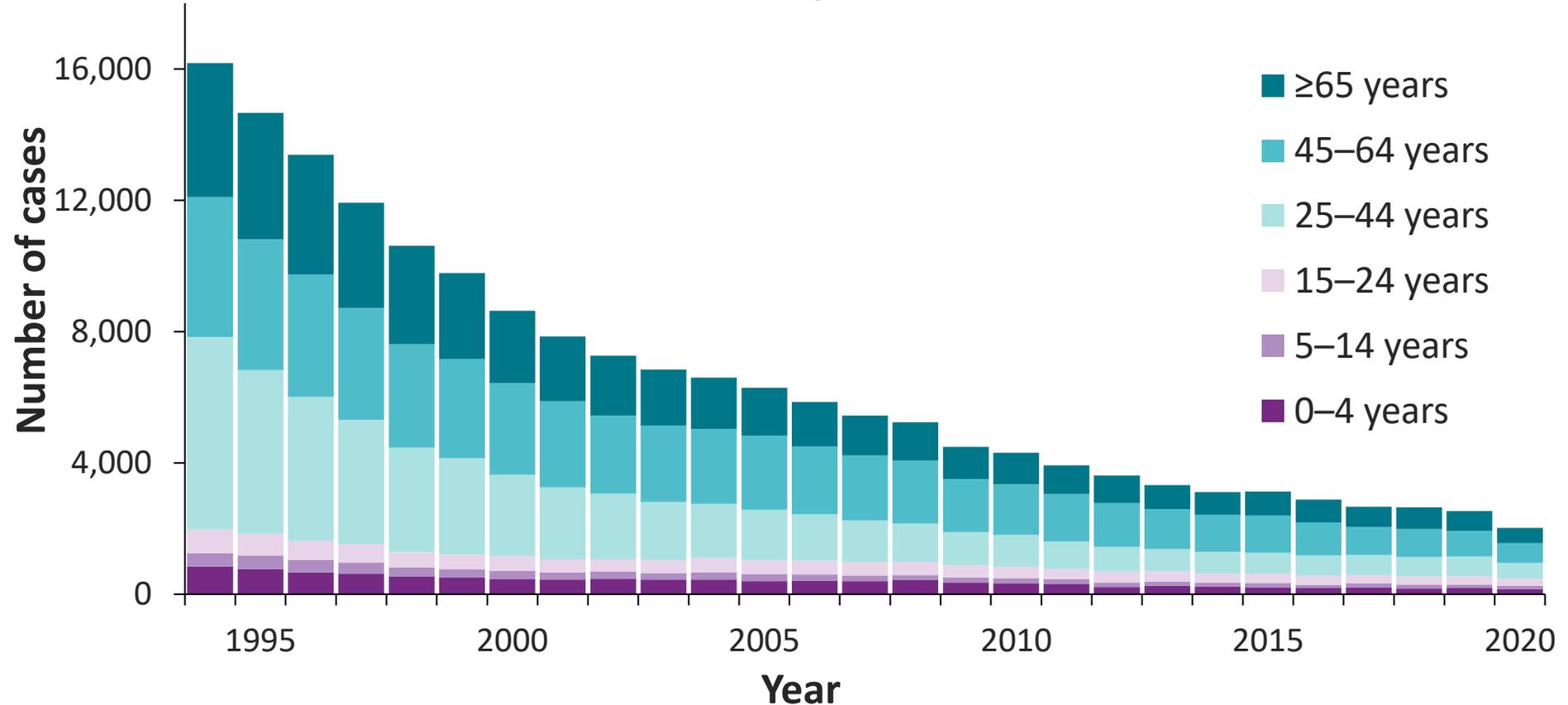
# TB Cases by Age Group, United States, 1993–2020



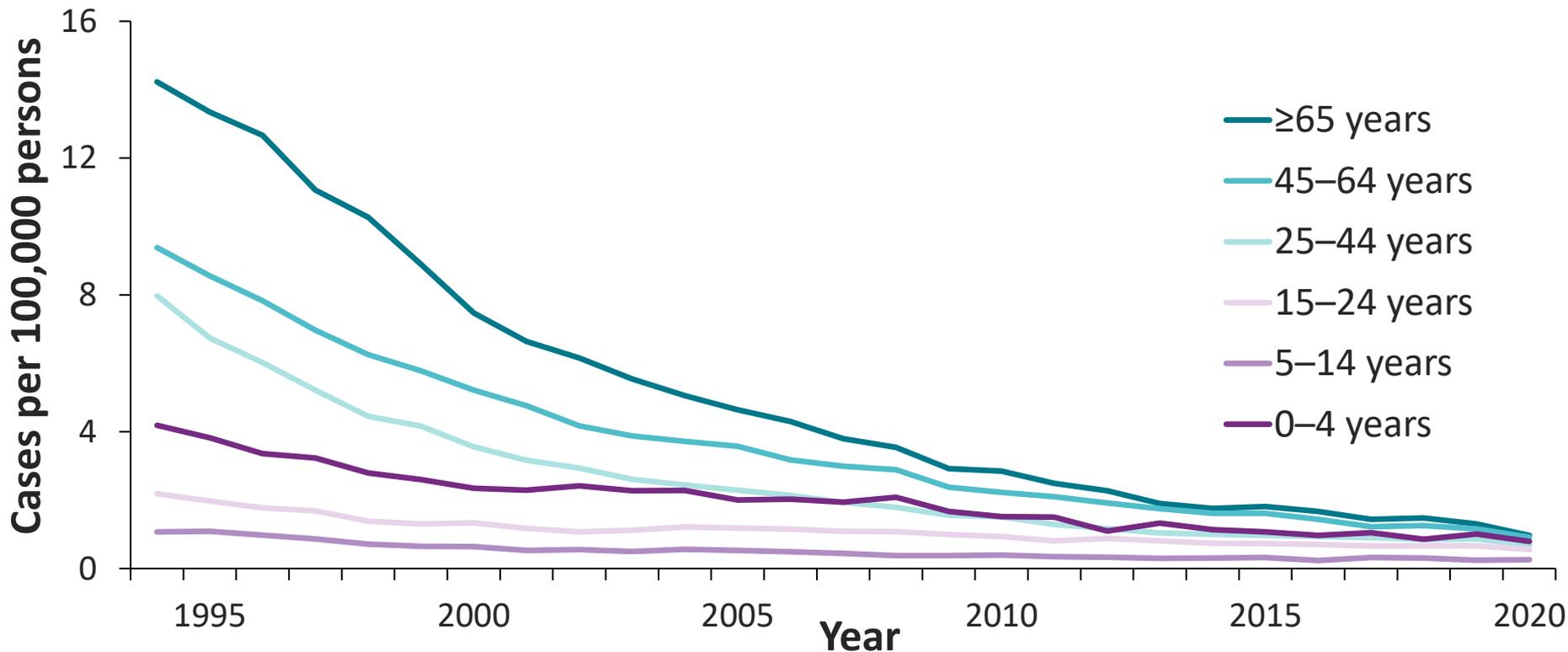
# TB Incidence Rates by Age Group, United States, 1993–2020



# TB Cases Among U.S.-born Persons by Age Group, United States, 1994–2020



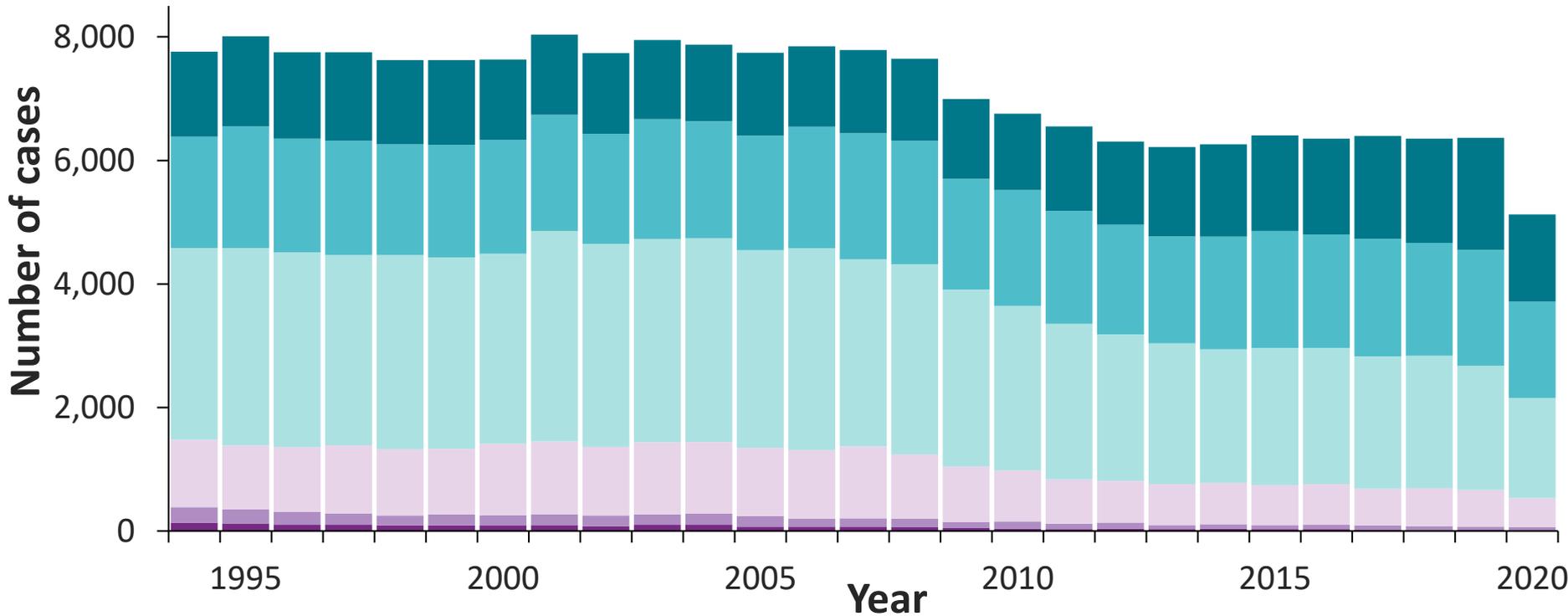
# TB Incidence Rates\* Among U.S.-born Persons by Age Group, United States, 1994–2020



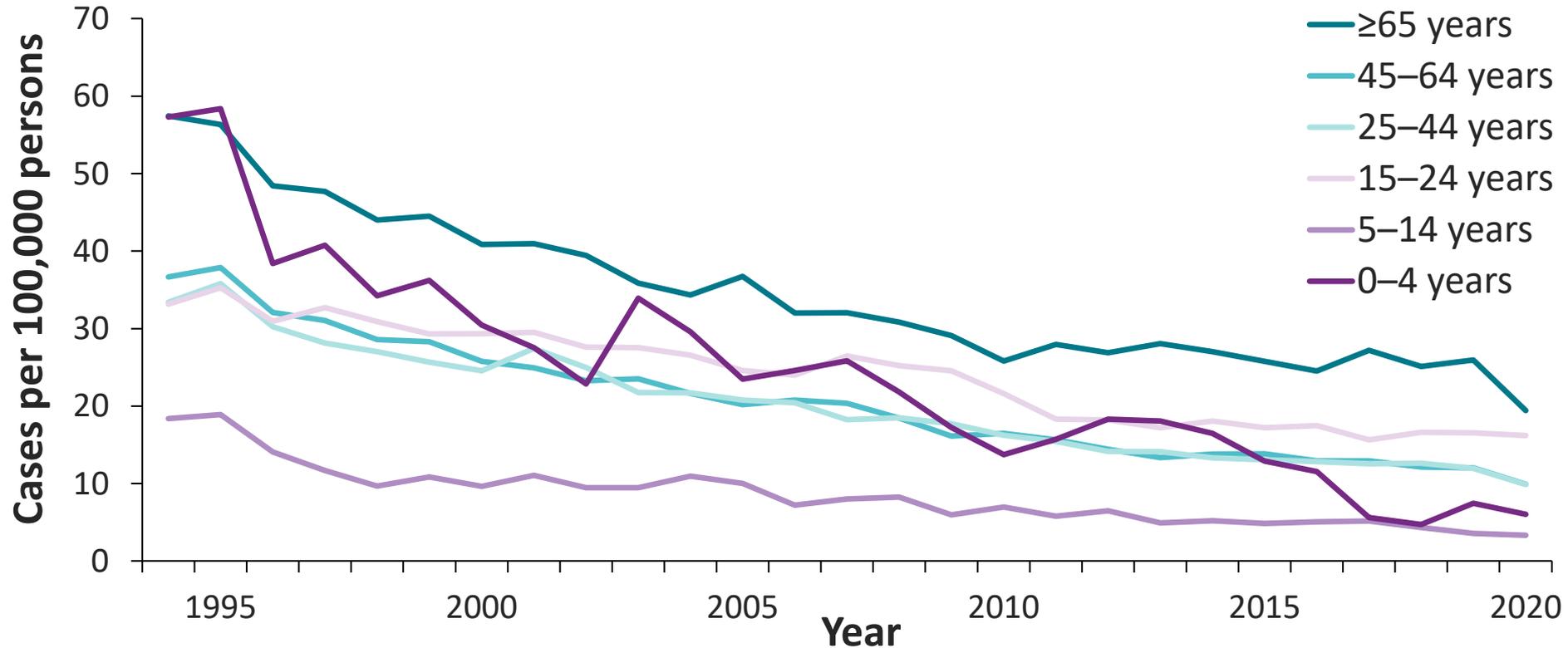
\*Population Source: U.S. Census Bureau, Current Population Survey Basic Monthly: <https://data.census.gov/mdat/>

# TB Cases Among Non-U.S.–born Persons by Age Group, United States, 1994–2020

0–4 years 5–14 years 15–24 years 25–44 years 45–64 years ≥65 years

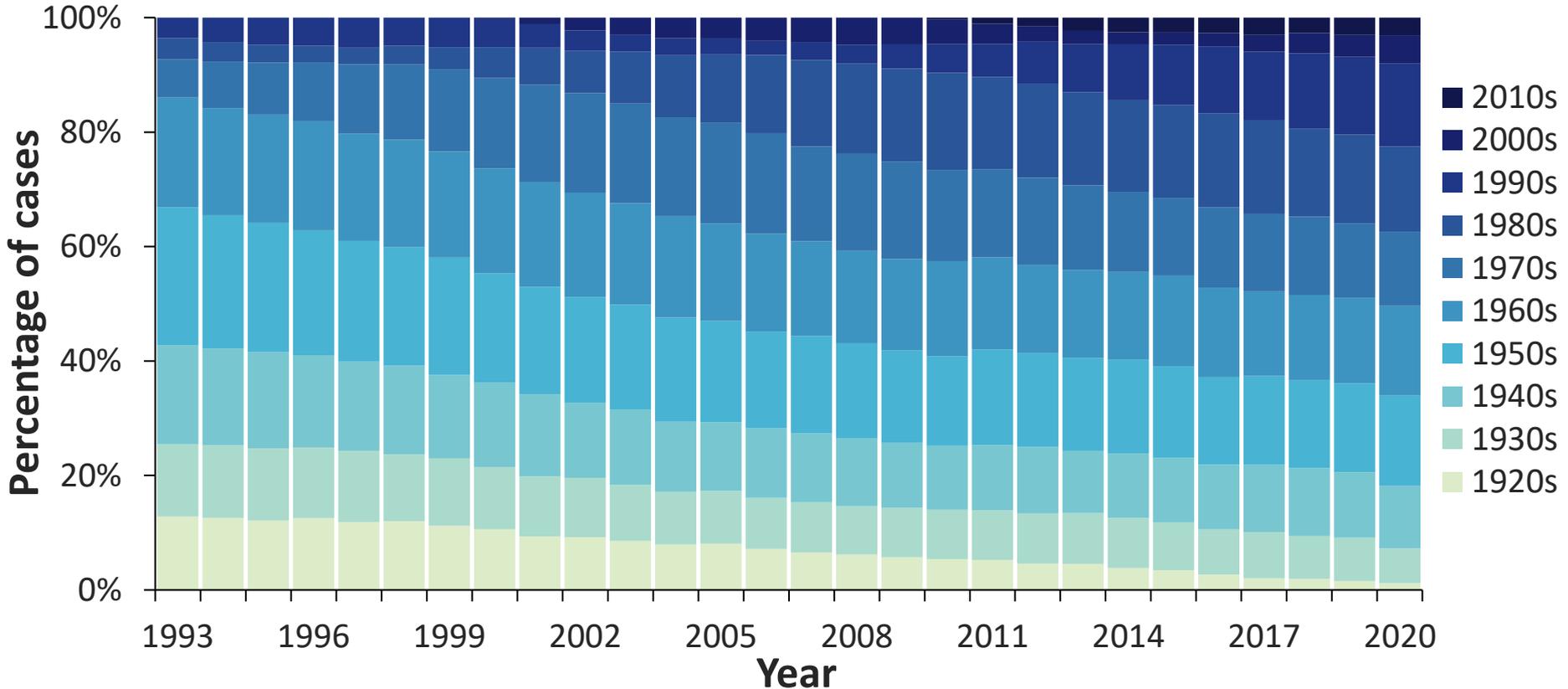


# TB Incidence Rates\* Among Non-U.S.–born Persons by Age Group, United States, 1994–2020

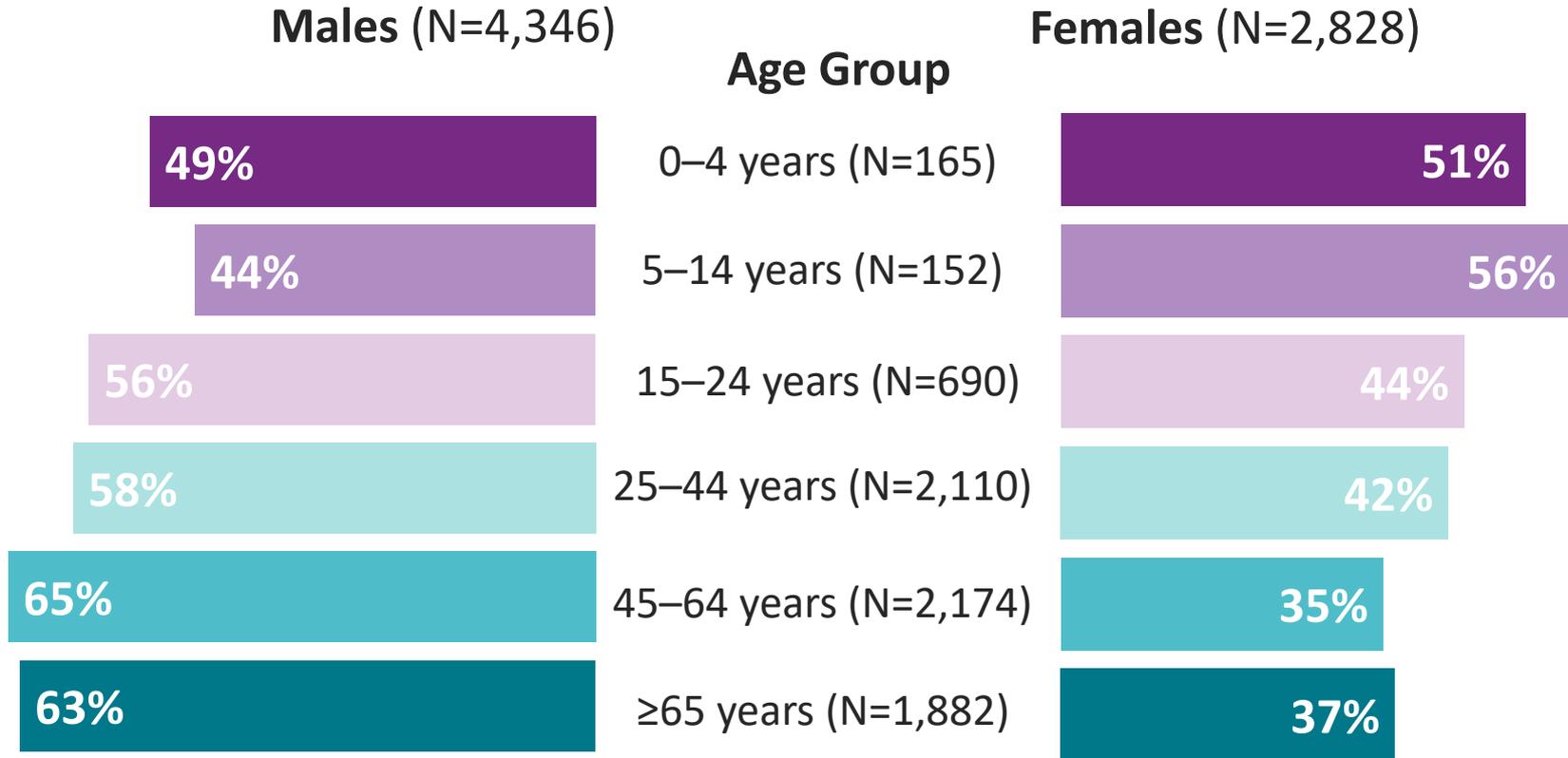


\*Population Source: U.S. Census Bureau, Current Population Survey Basic Monthly: <https://data.census.gov/mdat/>

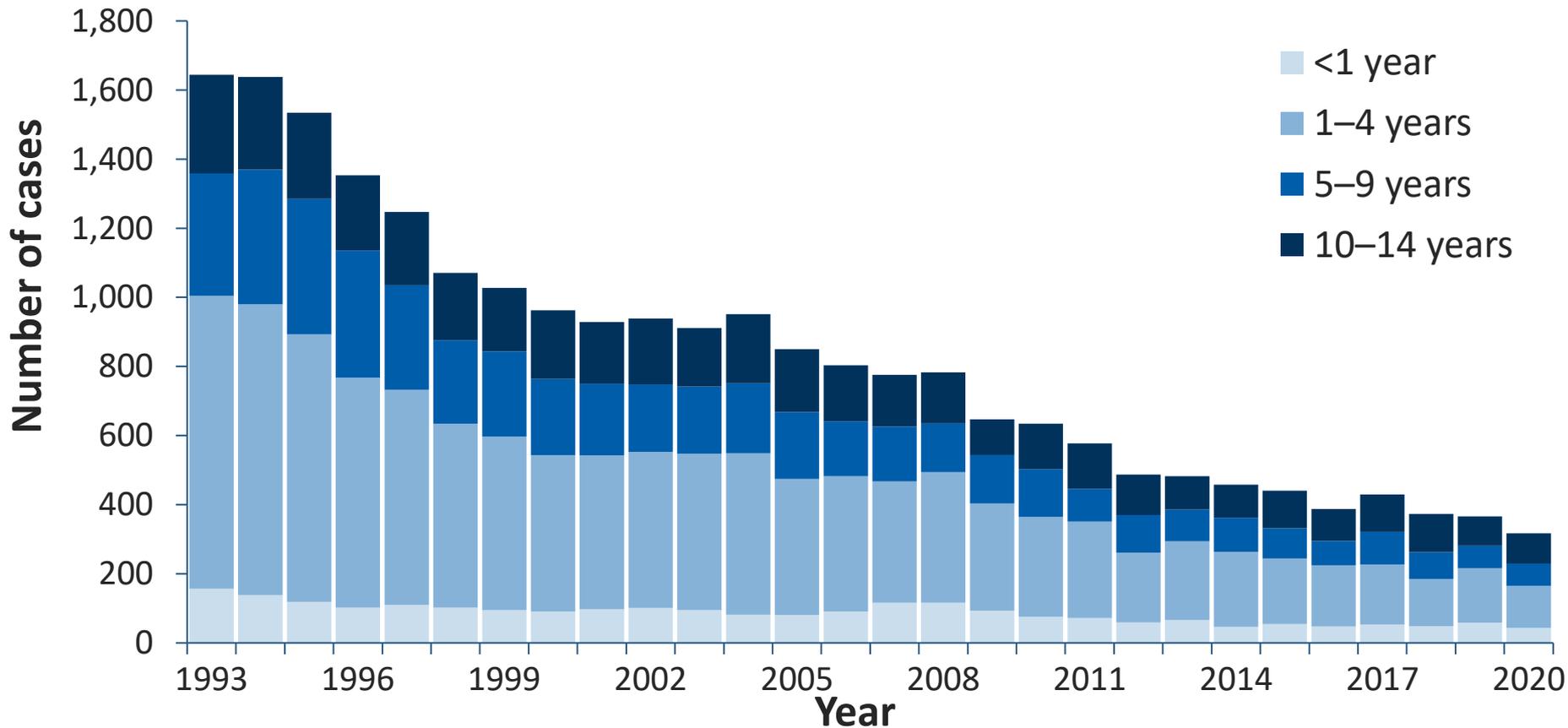
# Percentage of TB Cases by Birth Decade, United States, 1993–2020



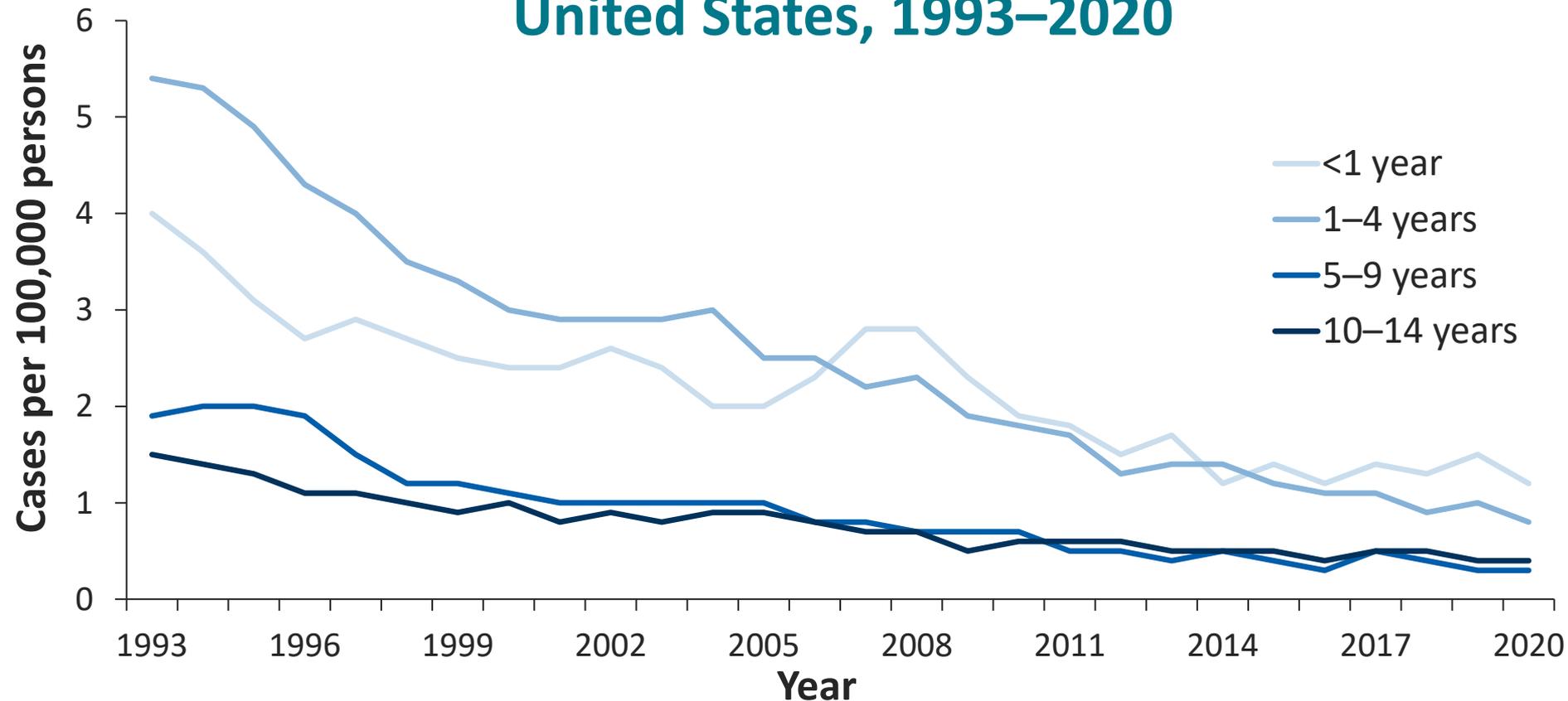
# Percentage of TB Cases by Sex and Age Group, United States, 2020



# Pediatric TB Cases by Age Group, United States, 1993–2020

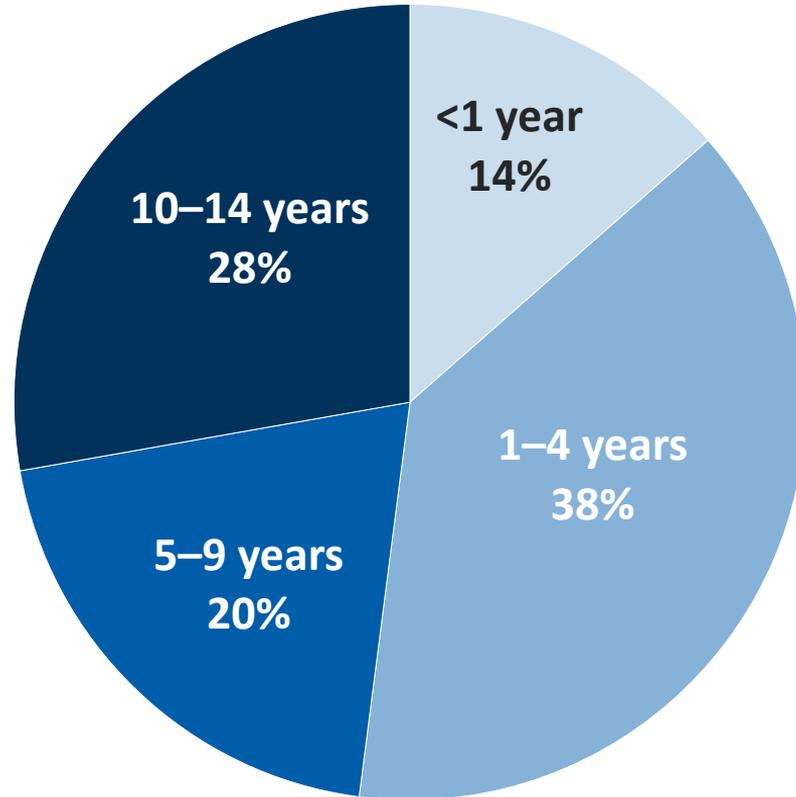


# Pediatric TB Incidence Rates\* by Age Group, United States, 1993–2020

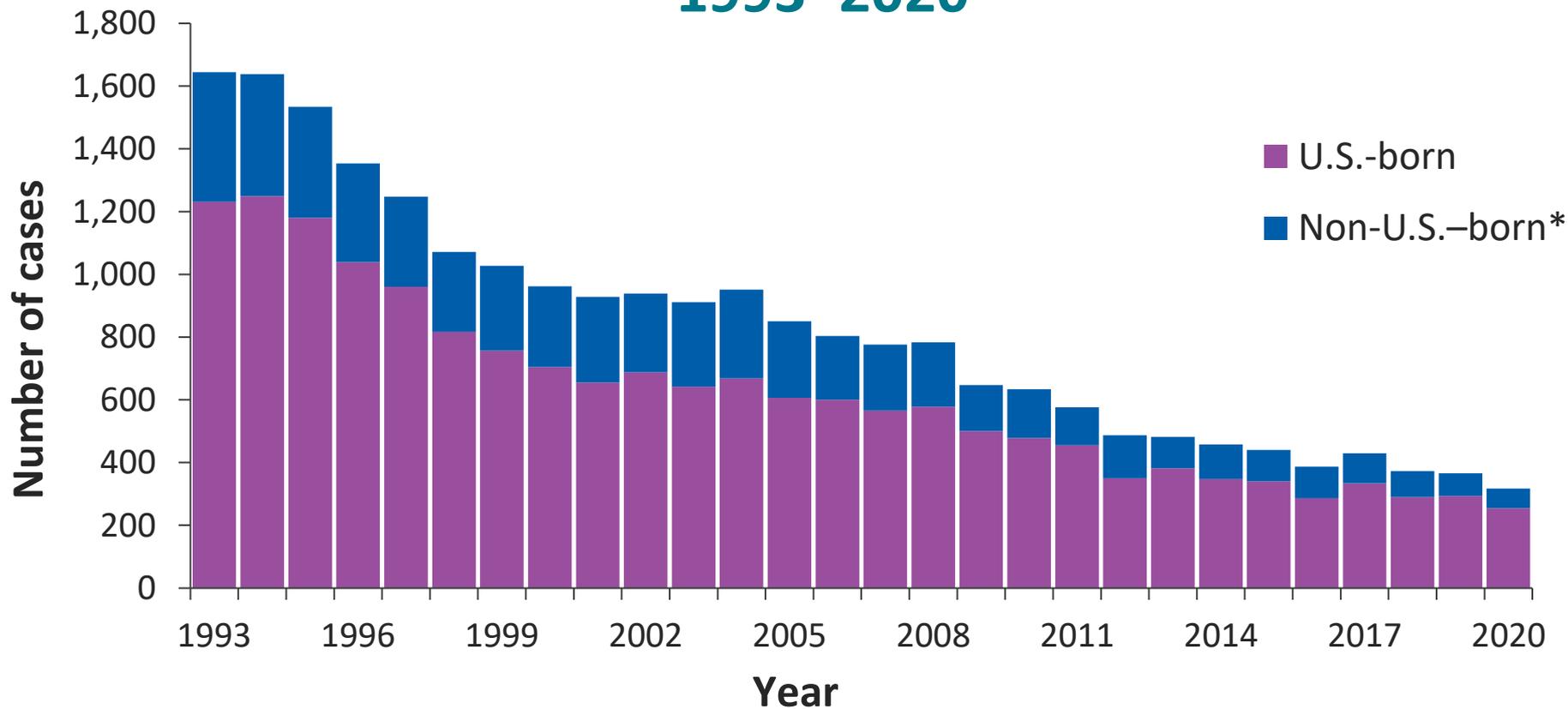


\*Population Source: U.S. Census Bureau, Current Population Survey Basic Monthly: <https://data.census.gov/mdat/>

# Percentage of Pediatric TB Cases by Age Group, United States, 2020 (N=317)

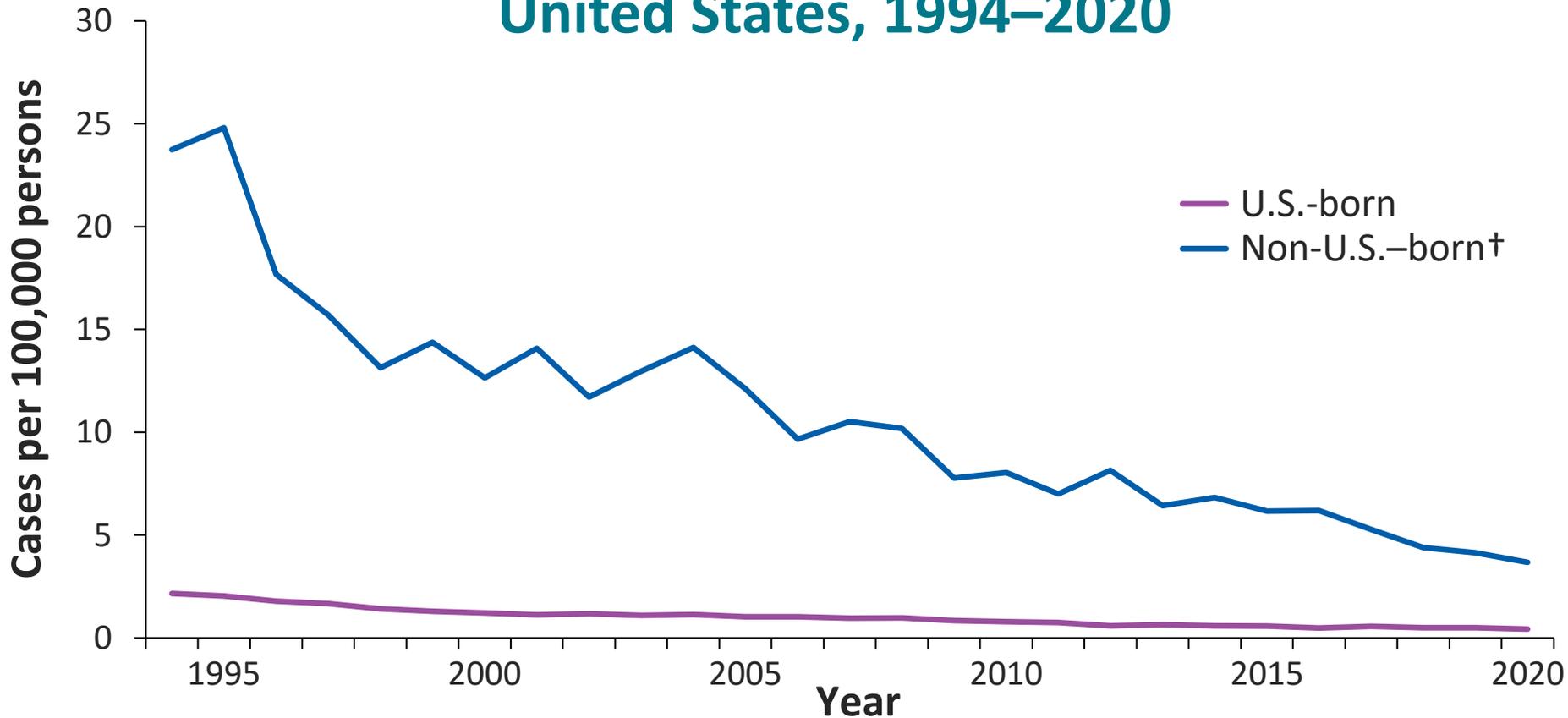


# Pediatric TB Cases by Origin of Birth, United States, 1993–2020



\*Non-U.S.-born refers to persons born outside the United States or its territories or not born to a U.S. citizen

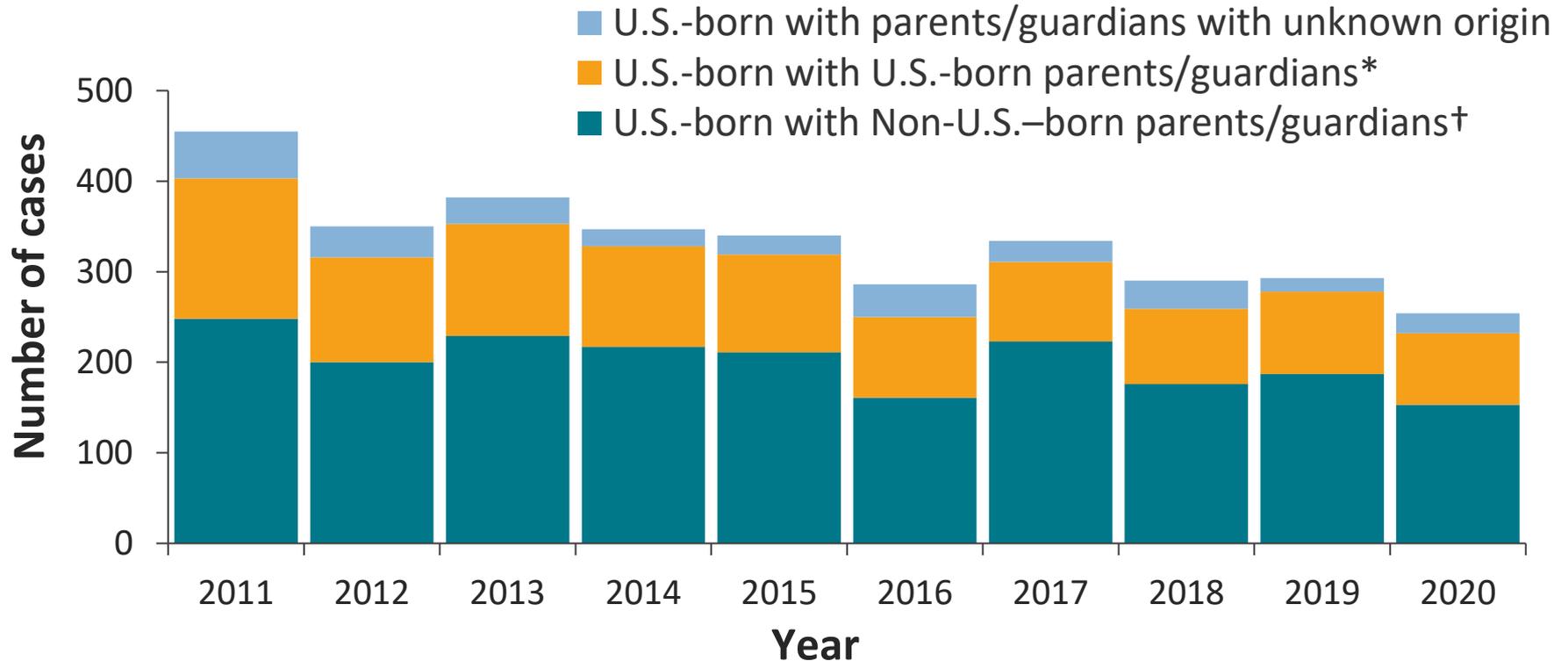
# Pediatric TB Incidence Rates\* by Origin of Birth, United States, 1994–2020



\*Population Source: U.S. Census Bureau, Current Population Survey Basic Monthly: <https://data.census.gov/mdat/>

†Non-U.S.-born refers to persons born outside the United States or its territories or not born to a U.S. citizen

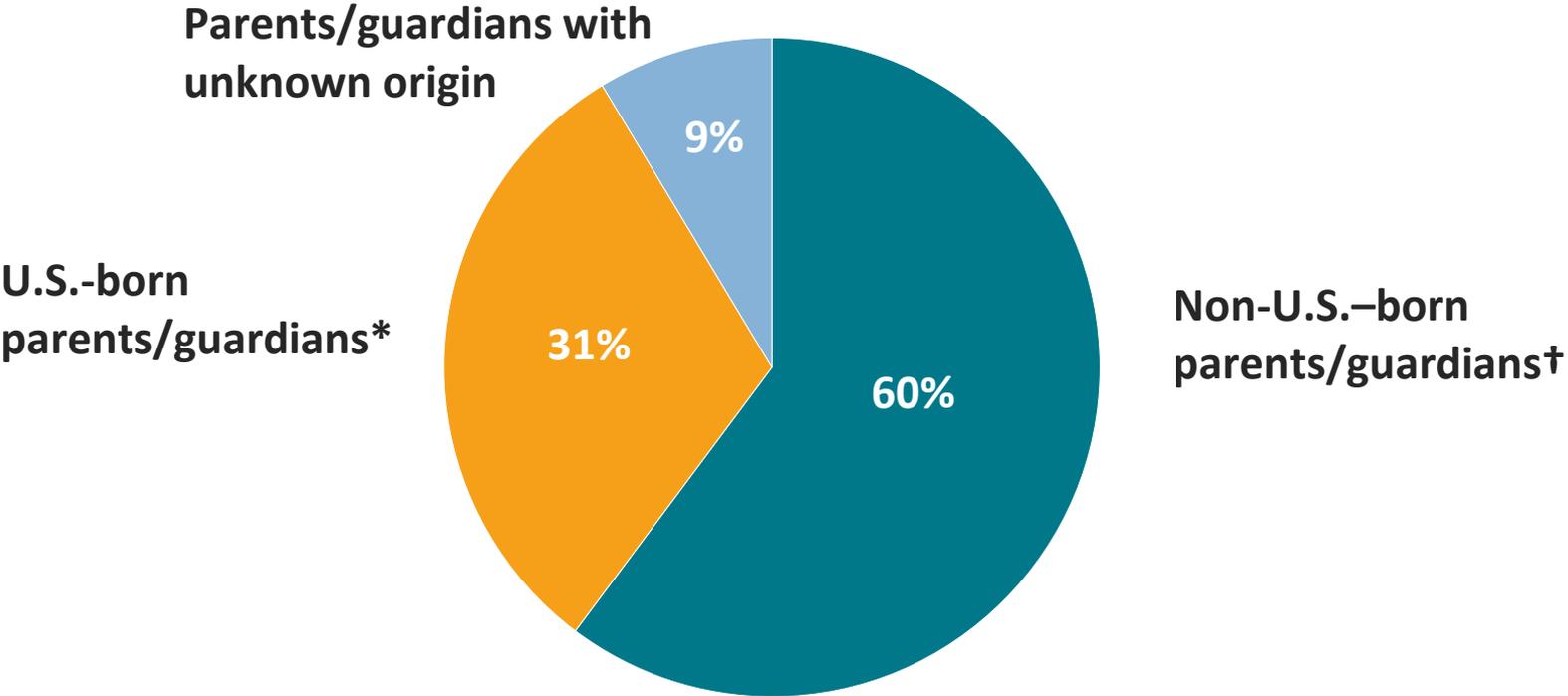
# Pediatric TB Cases Among U.S.-born Children by Parent/Guardian Status, United States, 2011–2020



\*U.S.-born guardian defined as born in the United States or U.S. territories

†At least one parent/guardian was non-U.S.-born.

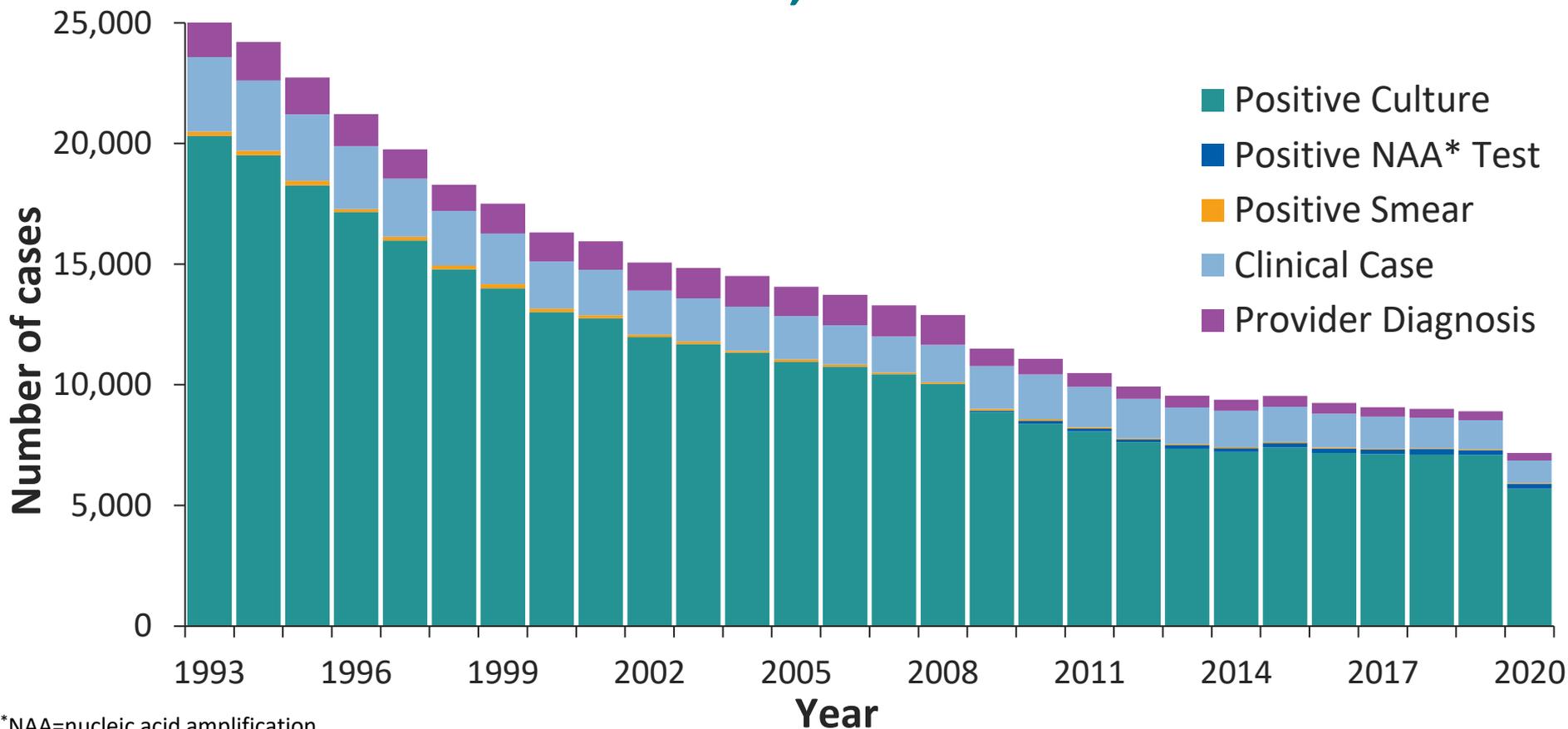
# Percentage of Pediatric TB Cases Among U.S.-born Children by Parent/Guardian Status, United States, 2020 (N=254)



\*U.S.-born guardian defined as born in the United States or U.S. territories

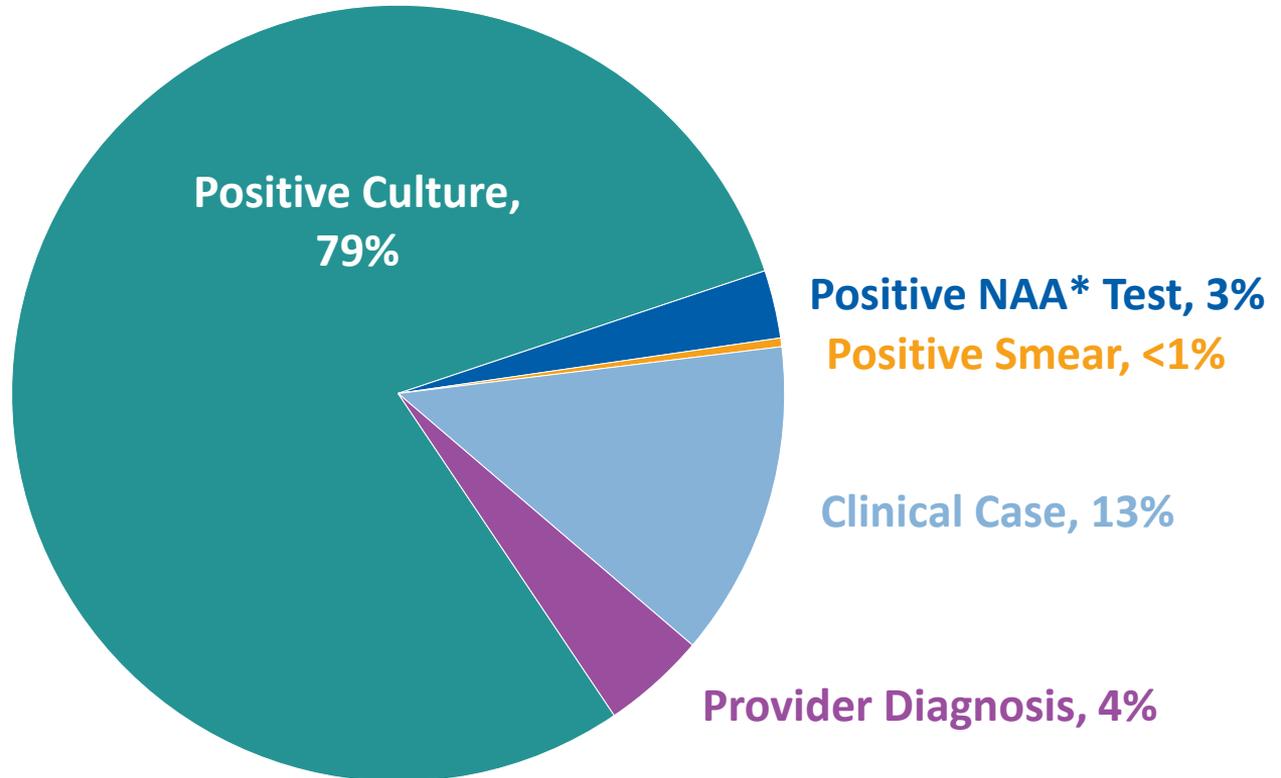
†At least one parent/guardian was non-U.S.-born

# TB Cases by Case Verification Criteria, United States, 1993–2020



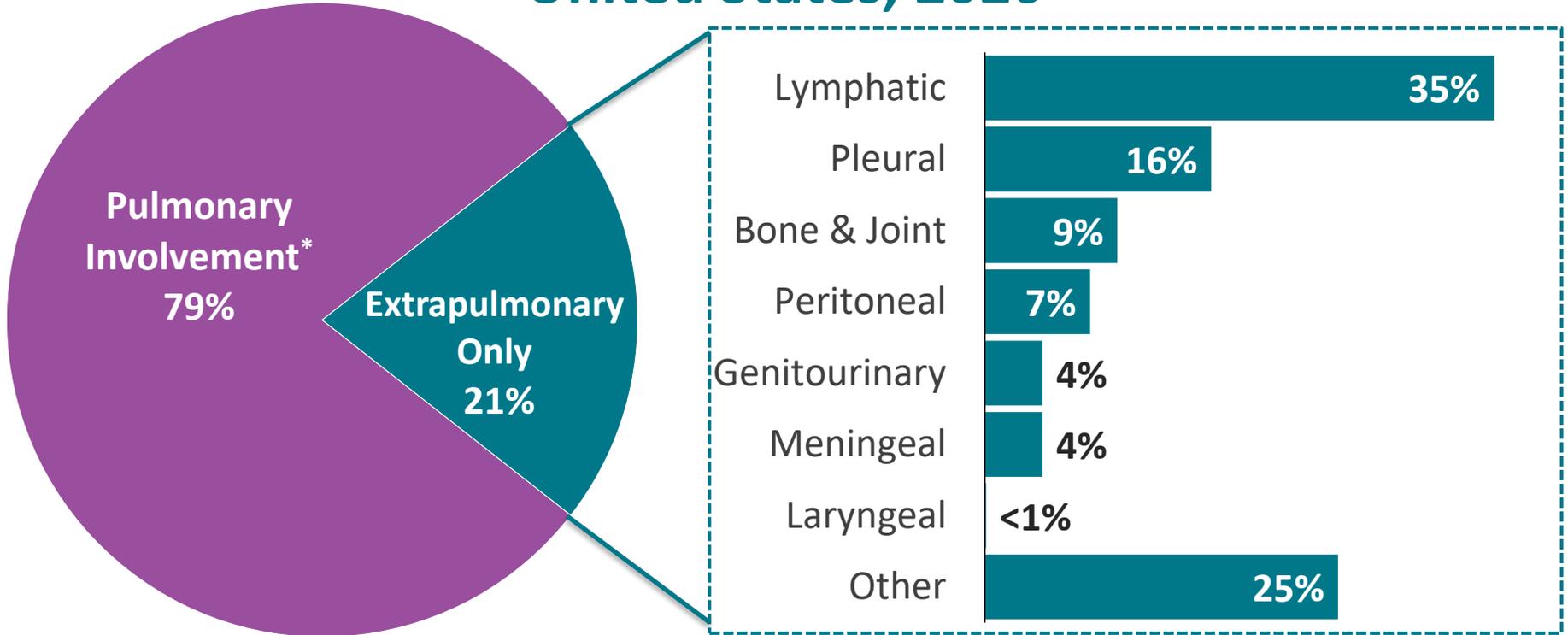
\*NAA=nucleic acid amplification

# Percentage TB Cases by Case Verification Criteria, United States, 2020 (N=7,174)



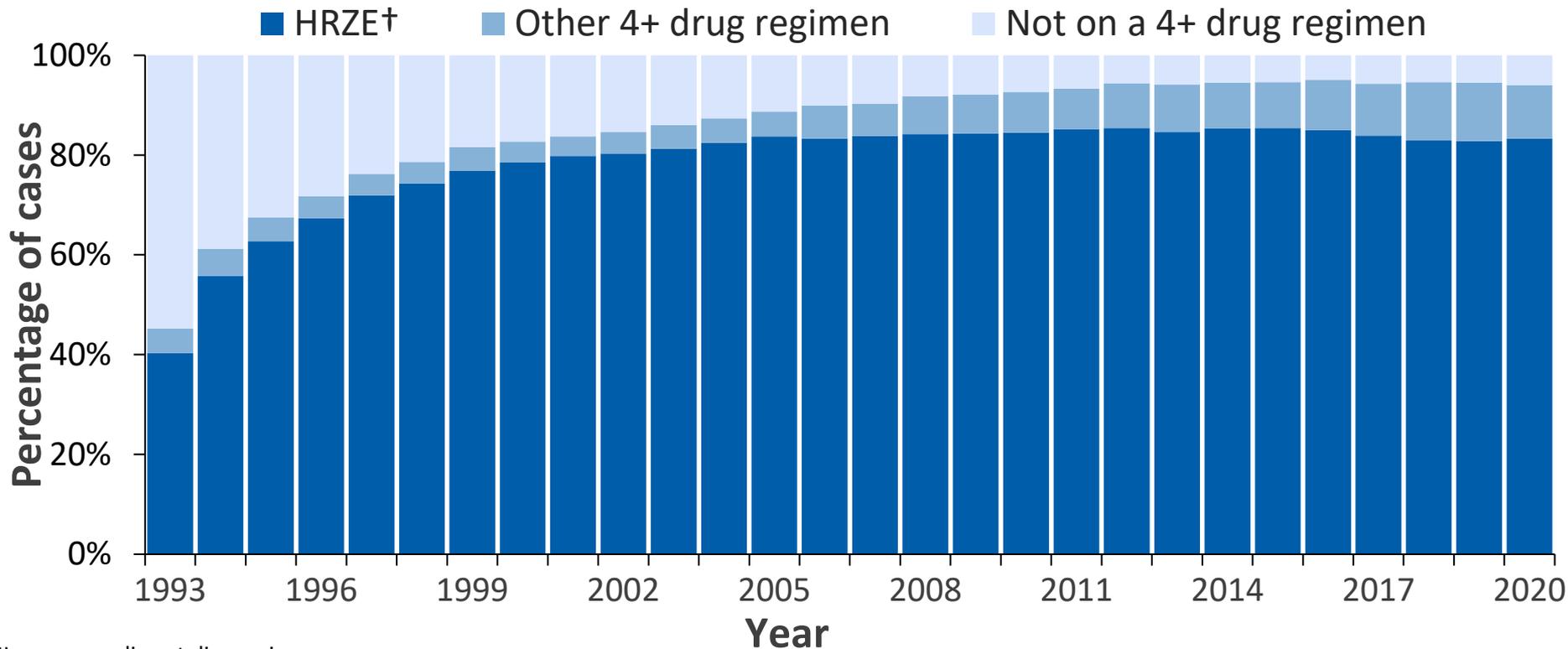
\*NAA=nucleic acid amplification

# Percentage of TB Cases by Site of Disease, United States, 2020



\*Any pulmonary involvement which includes cases that are pulmonary only and both pulmonary and extrapulmonary. Patients may have more than one disease site but are counted in mutually exclusive categories for surveillance purposes.

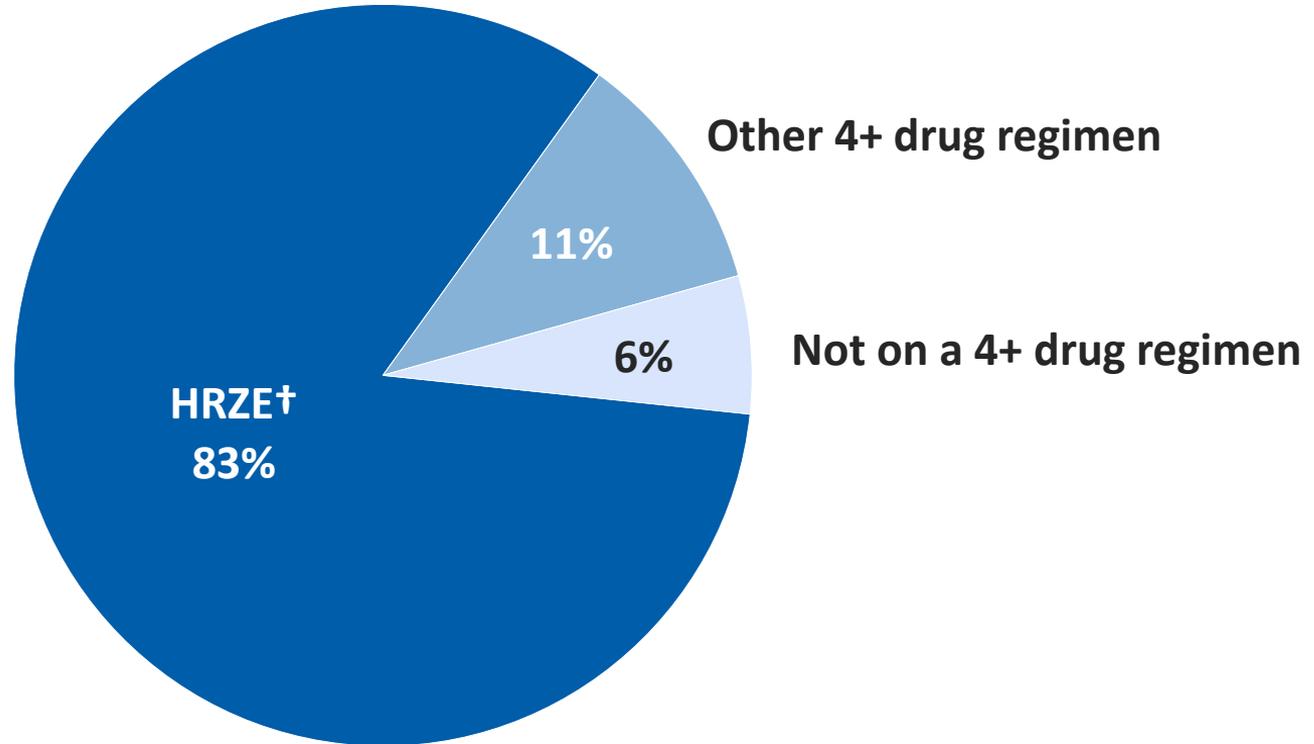
# Percentage of TB Cases\* by Initial Drug Regimen, United States, 1993–2020



\*In persons alive at diagnosis

<sup>†</sup>HRZE=isoniazid, rifampin, pyrazinamide, and ethambutol

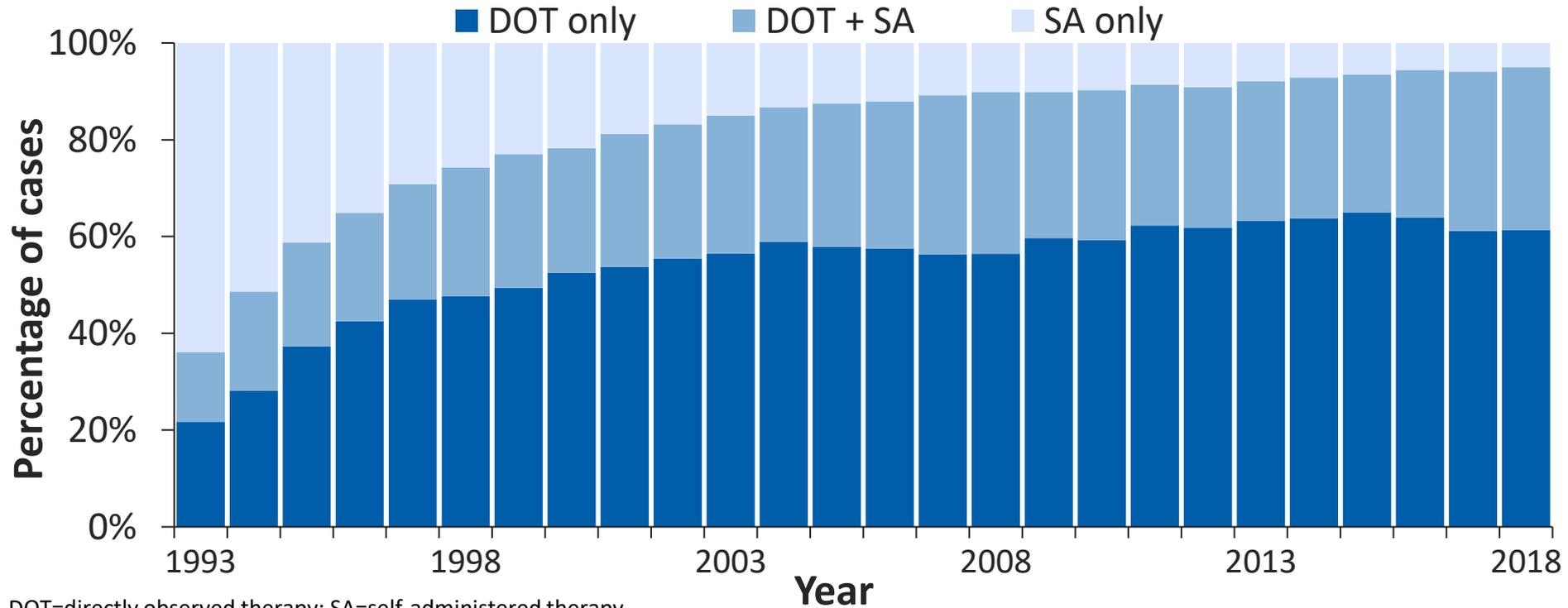
# Percentage of TB Cases,\* by Initial Drug Regimen, United States, 2020 (N=7,174)



\*In persons alive at diagnosis

†HRZE=isoniazid, rifampin, pyrazinamide, and ethambutol

# Percentage of TB Cases by Mode of Treatment Administration,\* United States, 1993–2018†

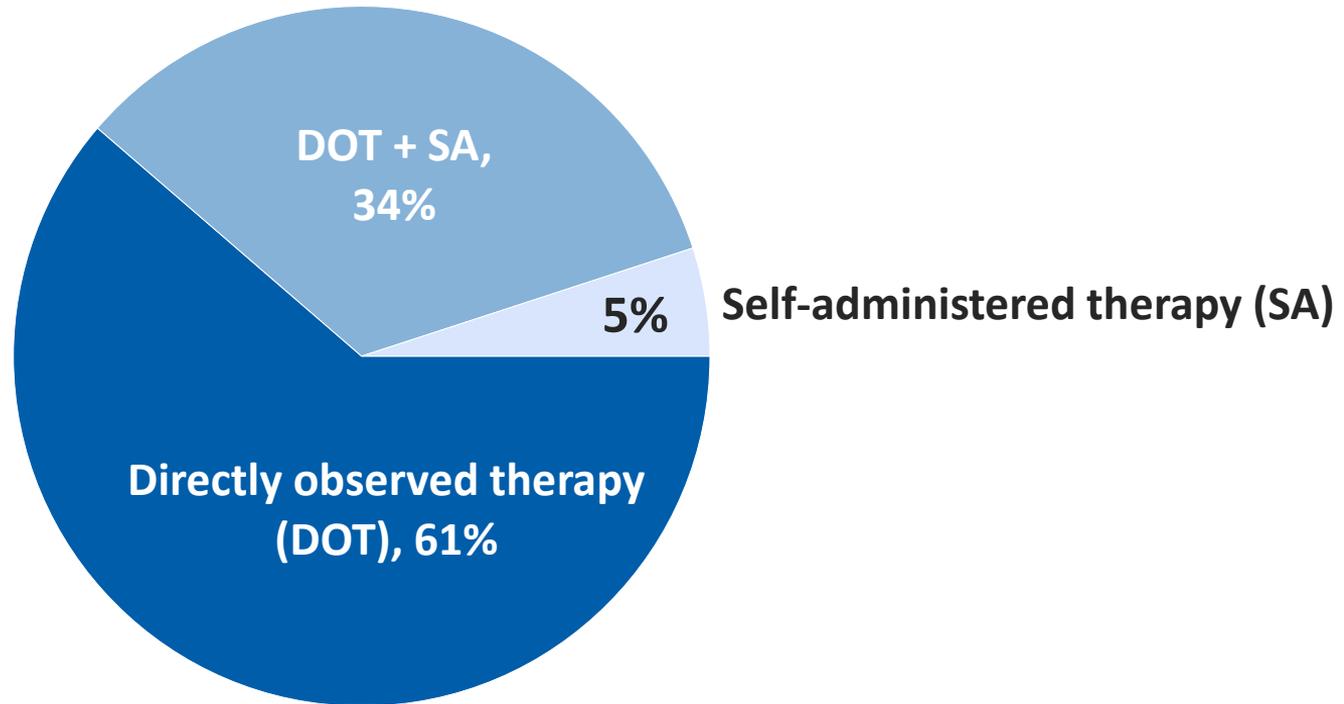


DOT=directly observed therapy; SA=self-administered therapy.

\*Percentage of total cases among persons alive at diagnosis, with an initial regimen of one or more drugs prescribed and excluding cases with unknown mode of treatment administration.

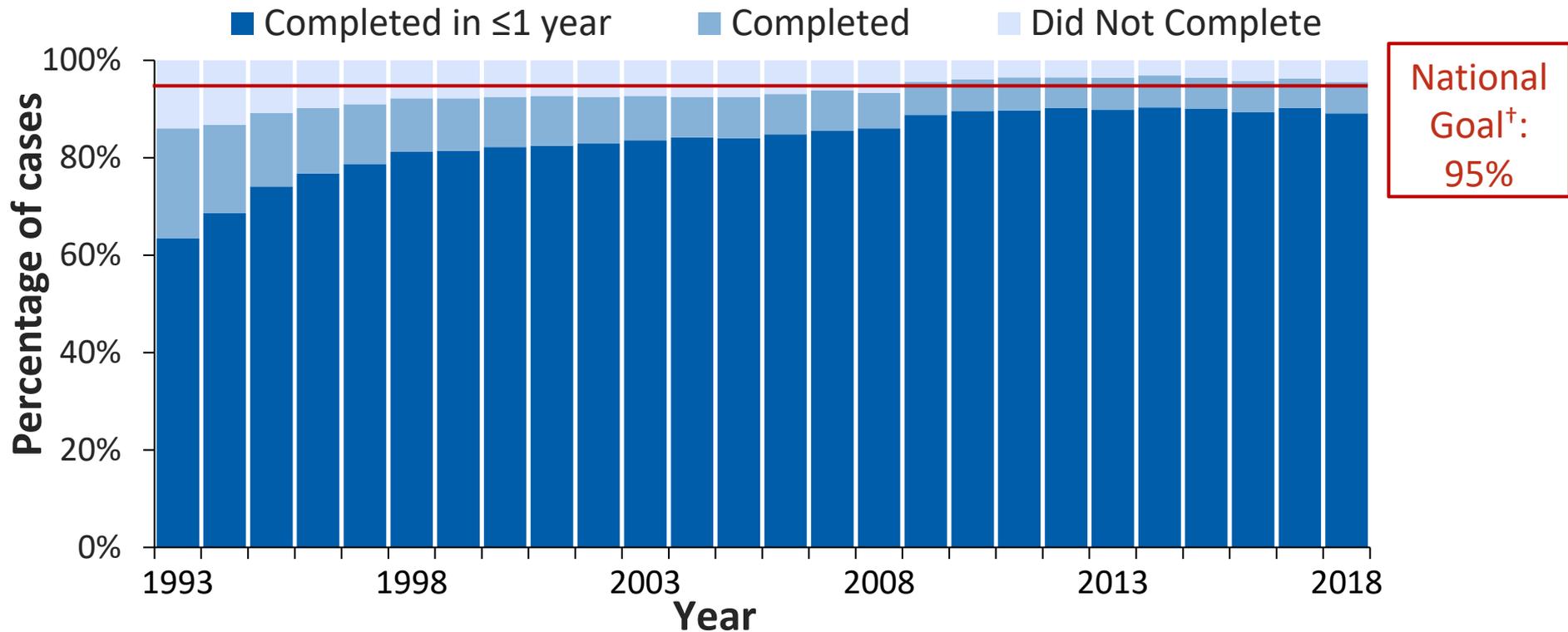
†Data available through 2018 only.

# Percentage of TB Cases by Mode of Treatment Administration,\* United States, 2018 (N=8,738)



\*Percentage of total cases among persons alive at diagnosis, with an initial regimen of one or more drugs prescribed and excluding cases with unknown mode of treatment administration.

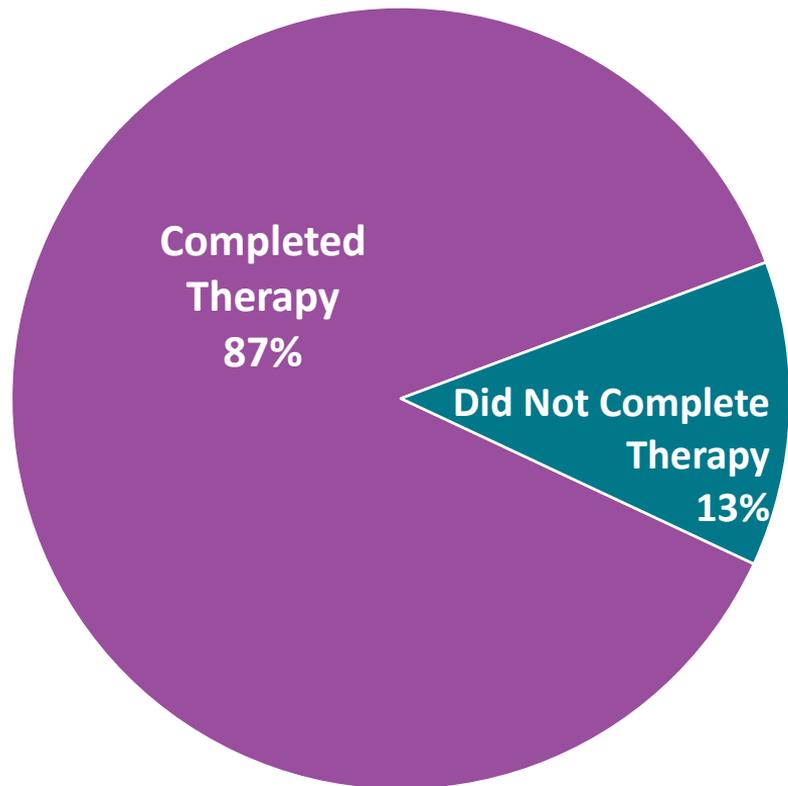
# Percentage of TB Cases by Completion of TB Therapy, United States, 1993–2018\*



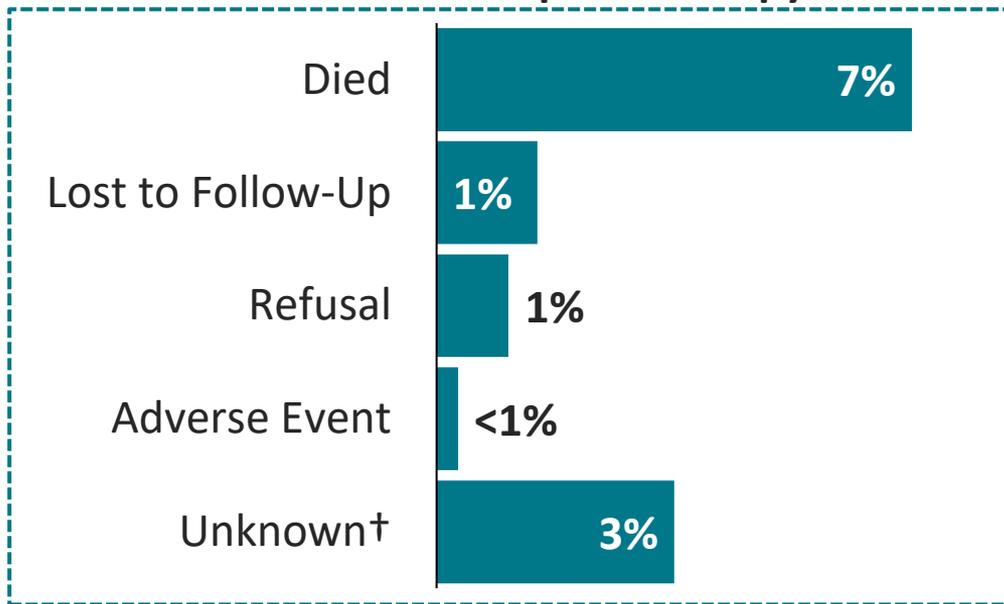
\*Data available through 2018 only. Among **all** patients who were alive at diagnosis and started on TB therapy and therapy  $\leq 12$  months indicated.

<sup>†</sup>National goal: for patients with newly diagnosed TB disease for whom  $\leq 12$  months of treatment is indicated, 95% complete treatment within 12 months.

# Percentage of TB Cases by Reason Therapy Stopped, United States, 2018\* (N=8,738)



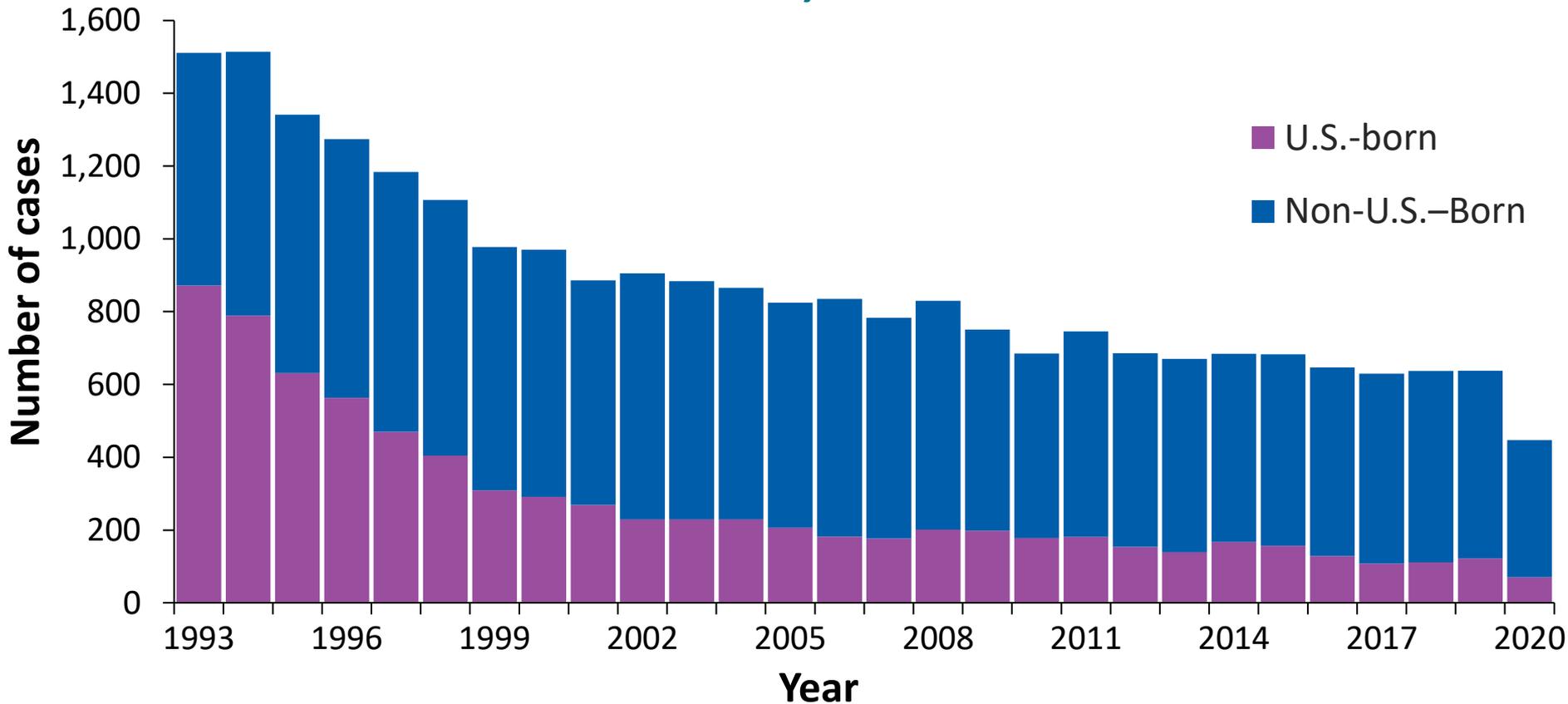
## Outcomes for patients who did not complete therapy



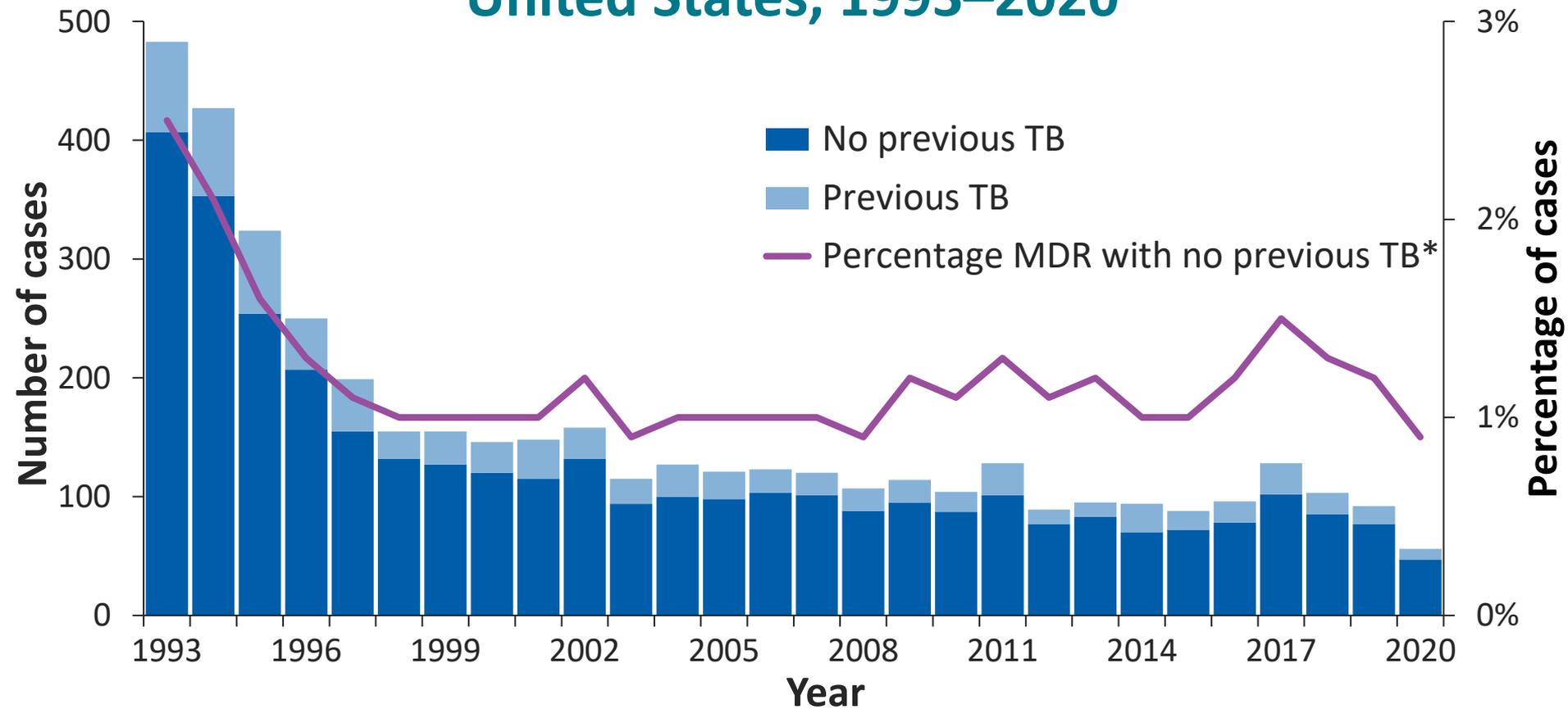
\*Data available through 2018 only. Among **all** patients who were alive at diagnosis and started on TB therapy.

†Unknown includes cases in persons reporting reason therapy stopped as other, missing, unknown, or moved.

# TB Cases by Isoniazid Resistance and Origin of Birth, United States, 1993–2020

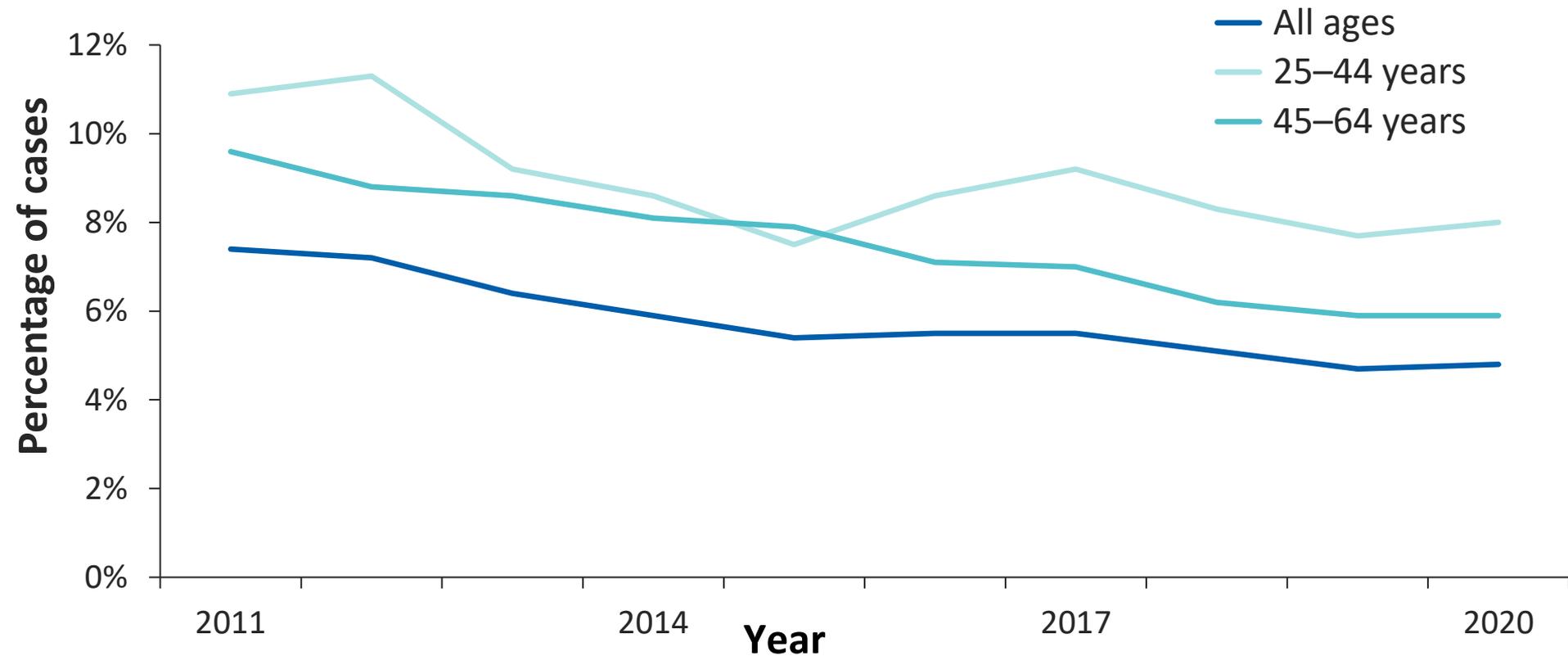


# Cases and Percentages of MDR TB by History of TB, United States, 1993–2020

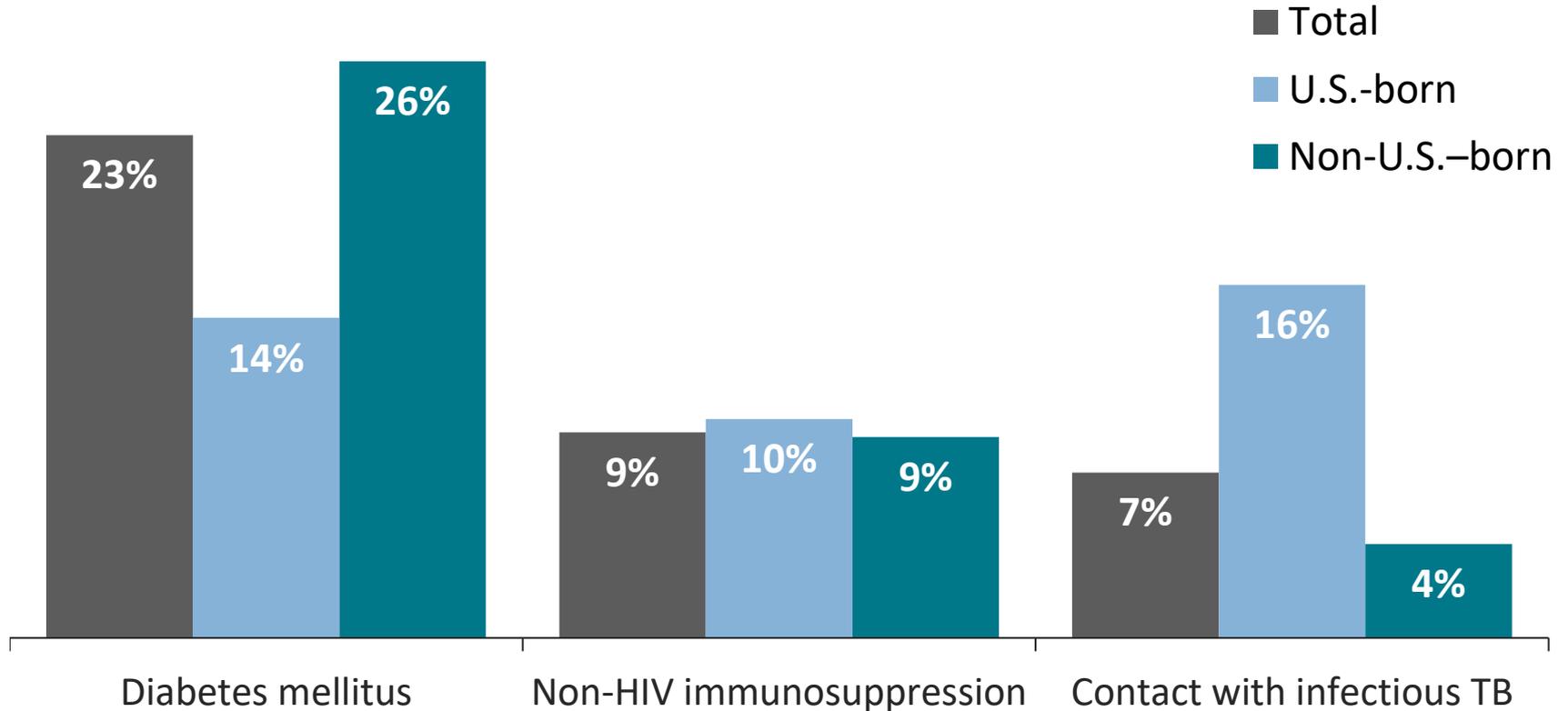


\*Based on initial isolates from persons with no prior history of TB; multidrug-resistant TB (MDR TB) is defined as resistance to at least isoniazid and rifampin.

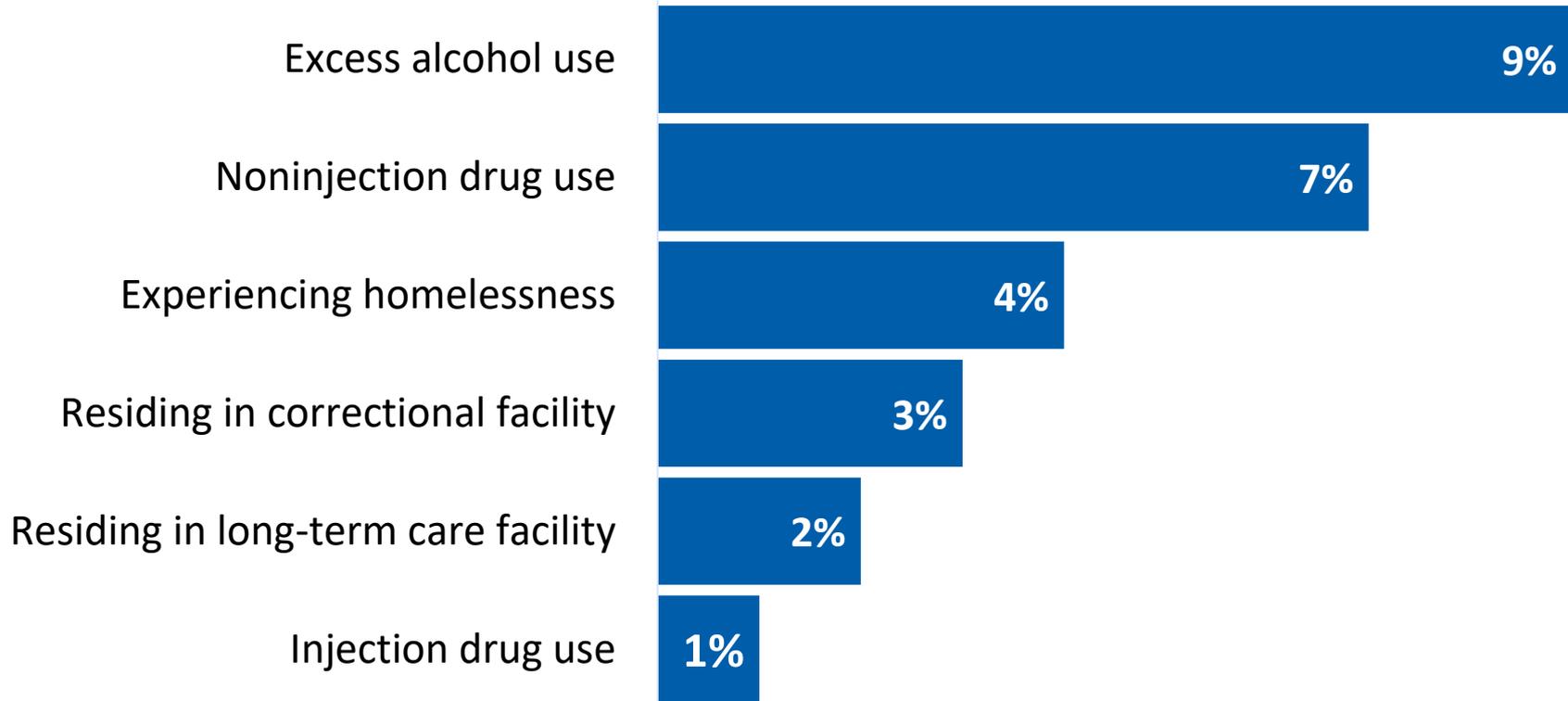
# Percentage of HIV Coinfection by Age among Persons with TB, United States, 2011–2020



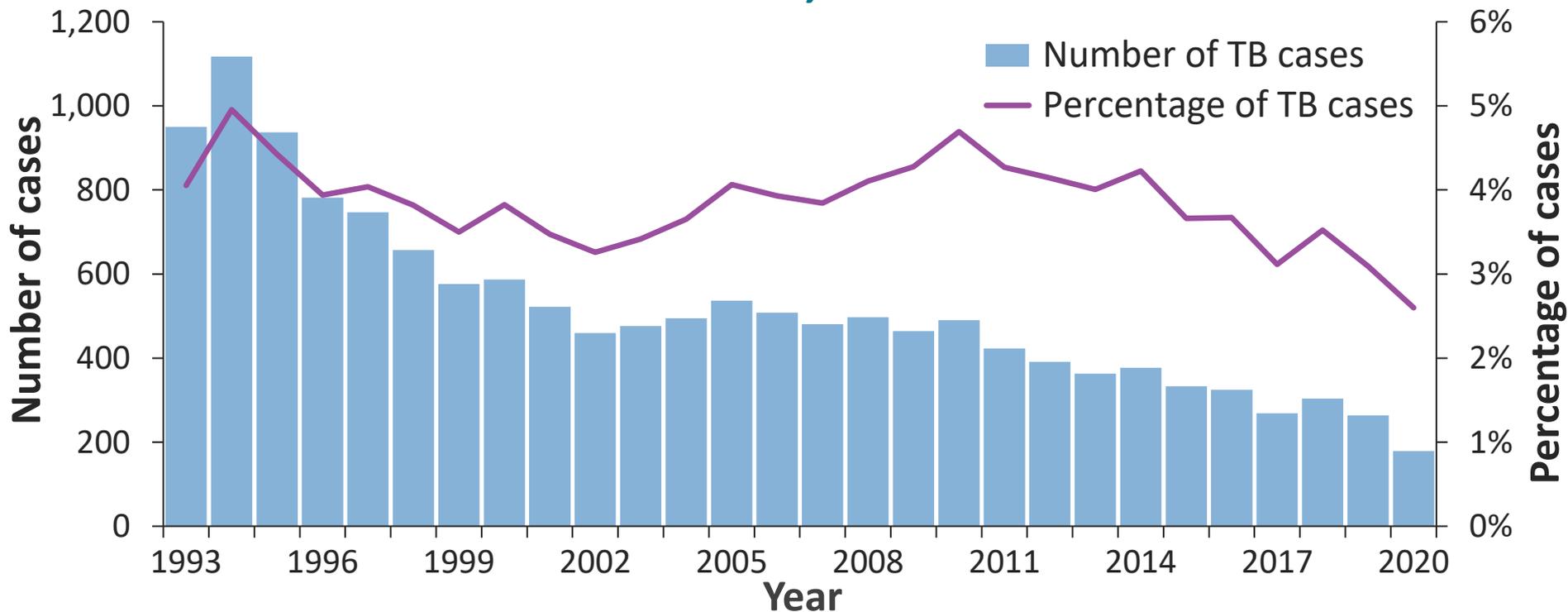
# Percentage of Selected Risk Factors Among Persons with TB by Origin of Birth, United States, 2020



# Percentage of Social Risk Factor Among Persons Aged ≥15 Years with TB, United States, 2020

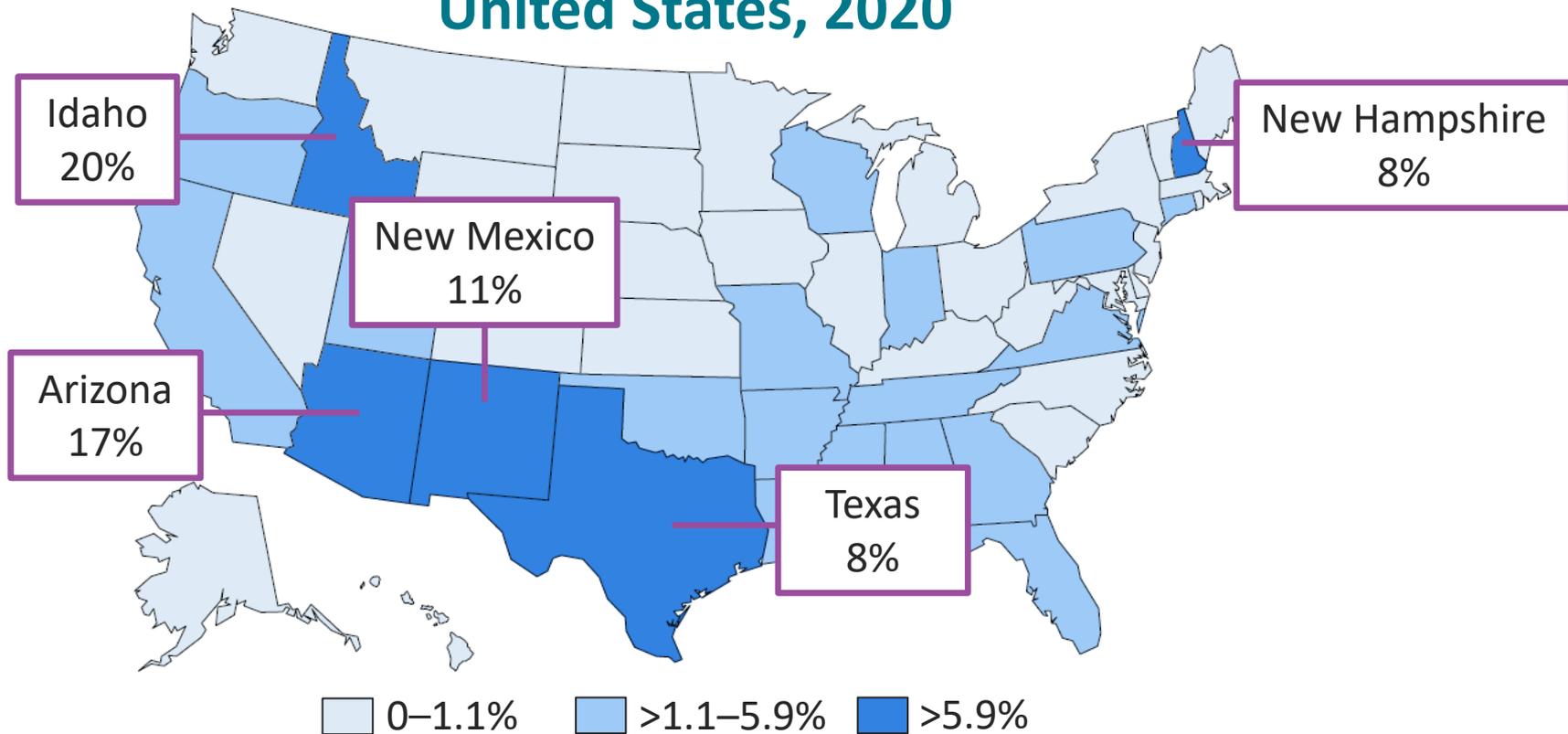


# Number and Percentage of Correctional Facility\* Residents Among Persons Aged $\geq 15$ Years with TB, United States, 1993–2020



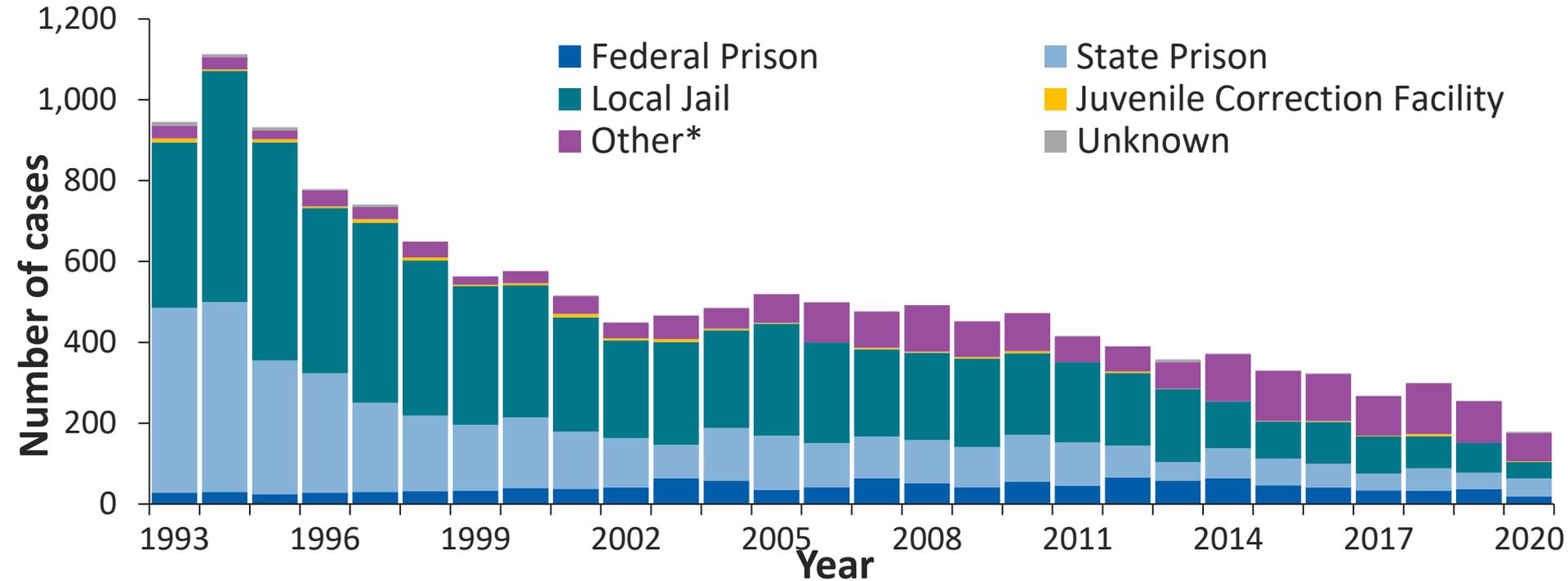
\*Correctional facilities include federal prisons, state prisons, local jails, juvenile correctional facilities, other correctional facilities, or unknown type of correctional facility.

# Five States with the Highest Percentages of TB Cases Diagnosed Among Correctional Facility\* Residents Aged $\geq 15$ Years, United States, 2020



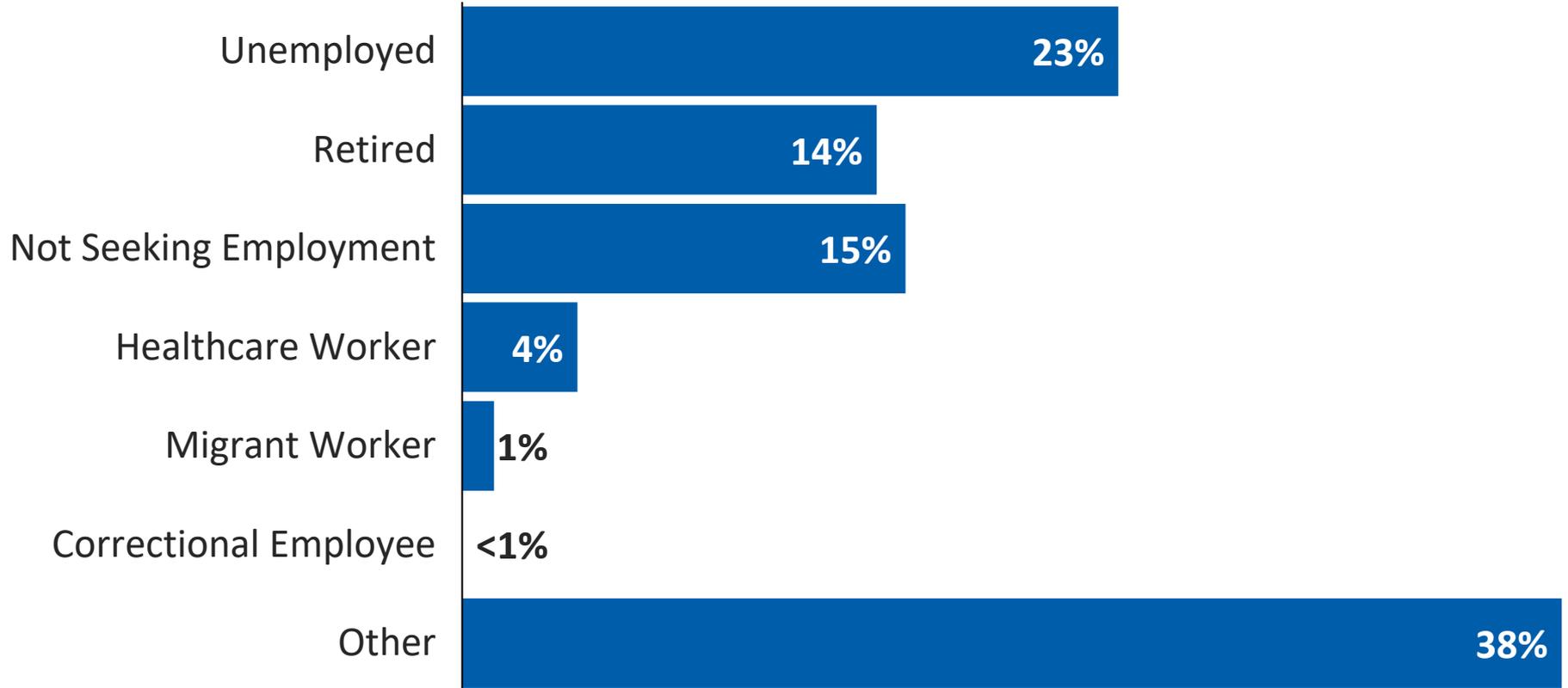
\*Correctional facilities include federal prisons, state prisons, local jails, juvenile correctional facilities, other correctional facilities, or unknown type.

# TB Cases Among Correctional Facility\* Residents Aged ≥15 Years by Type of Facility, United States, 1993–2020

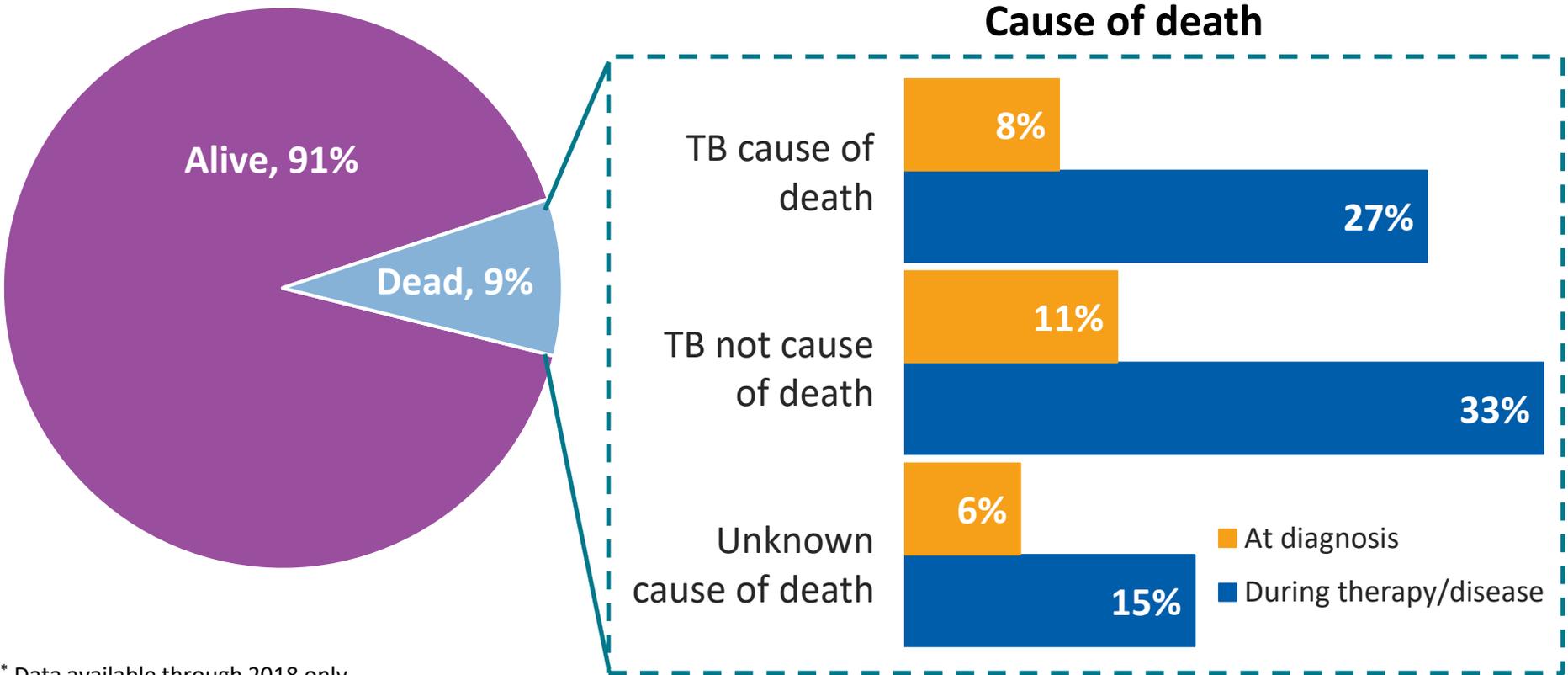


\*Includes Immigration and Customs Enforcement (ICE) detention centers, tribal jails operated by Indian reservations, police lockups (temporary holding facilities for person who have not been formally charged in court), military stockades and jails, or federal park facilities

# Percentage of TB Cases Among Persons Aged $\geq 15$ Years, by Primary Occupation, United States, 2020 (N=6,156)

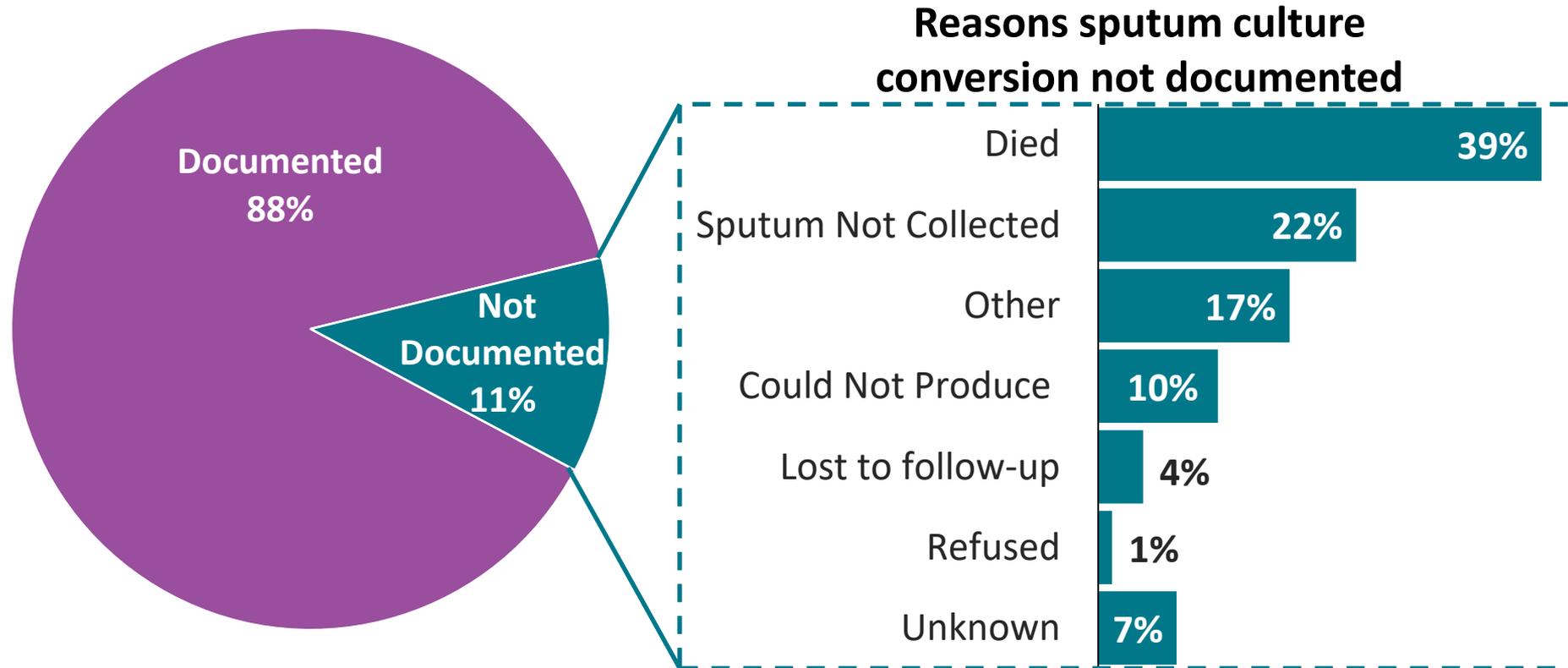


# Percentage of TB Cases by Status and Cause of Death, United States, 2018\* (N=9,006)



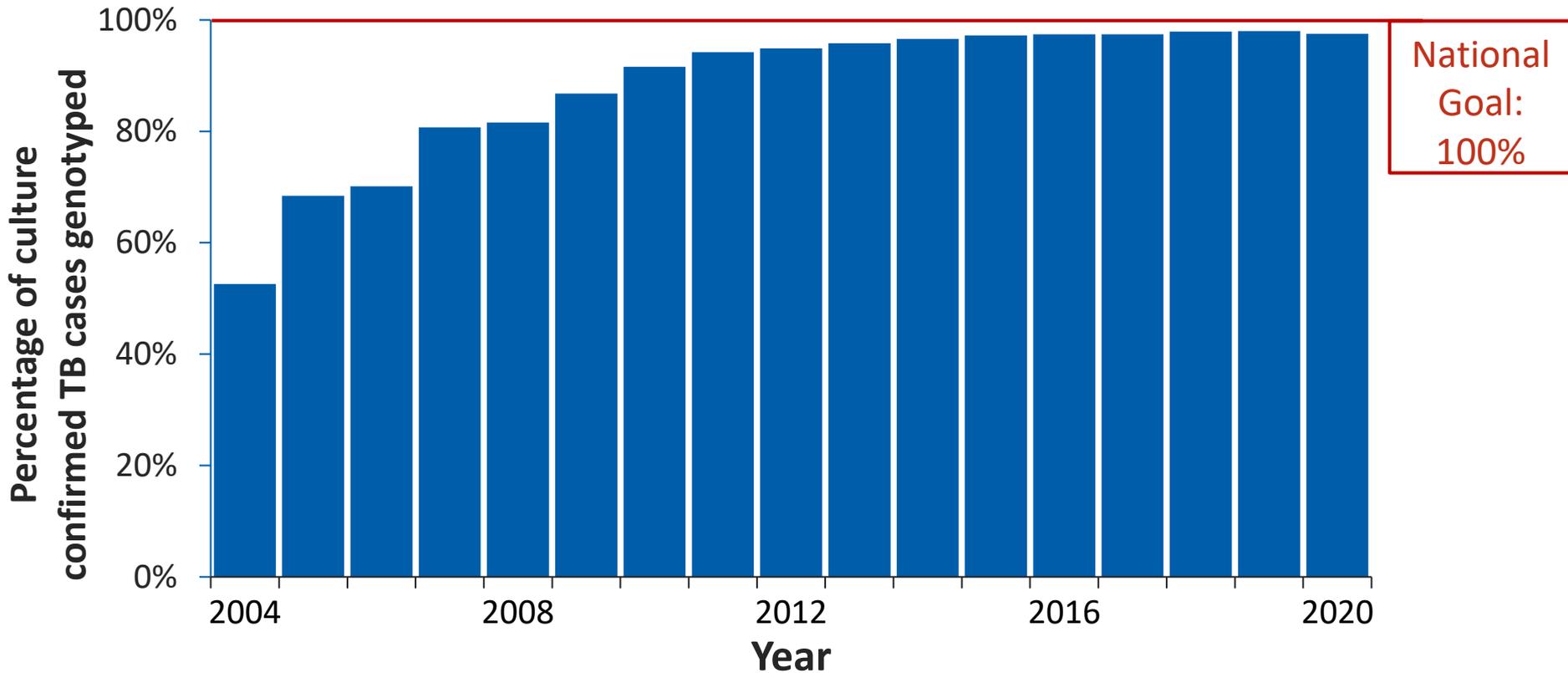
\* Data available through 2018 only.

# Percentage of Sputum Culture Conversions Documented, United States, 2018\* (N=5,087)



\*Data available through 2018 only; among persons who were alive at diagnosis and had a positive sputum culture.

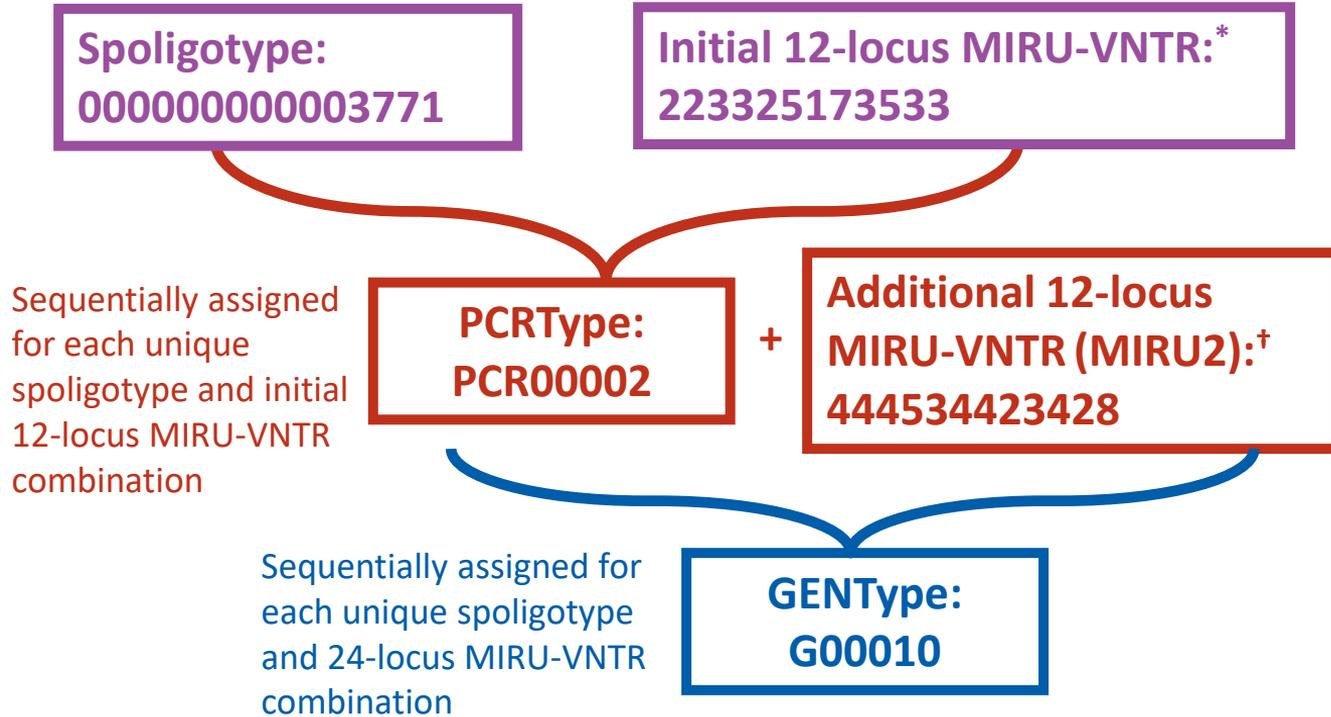
# National TB Genotyping Surveillance Coverage\* United States,† 2004–2020



\*Includes culture-confirmed TB cases with at least one genotyped isolate.

† Includes 50 states and the District of Columbia.

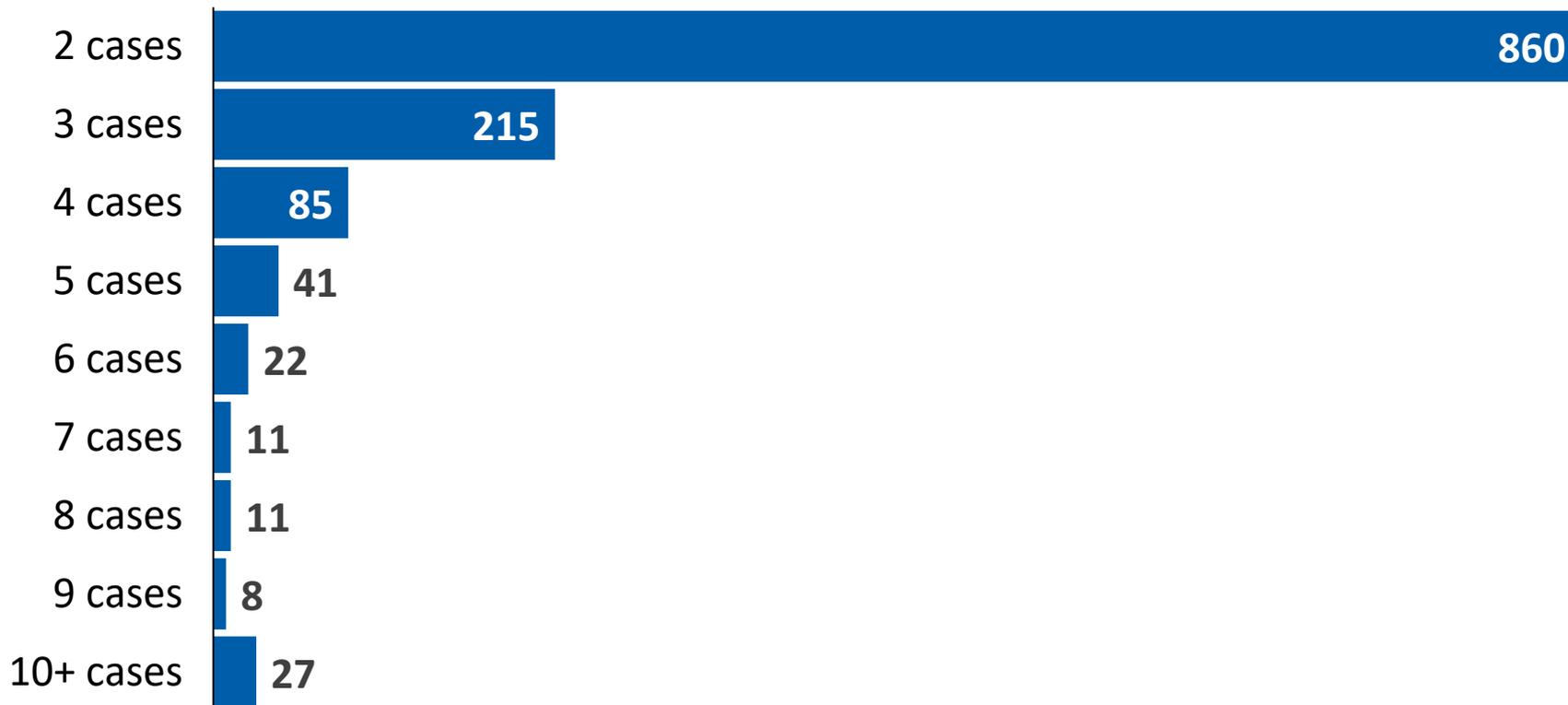
# Definitions for TB Genotyping in the United States



<sup>\*</sup> MIRU-VNTR=Mycobacterial interspersed repetitive unit–variable number tandem repeat.

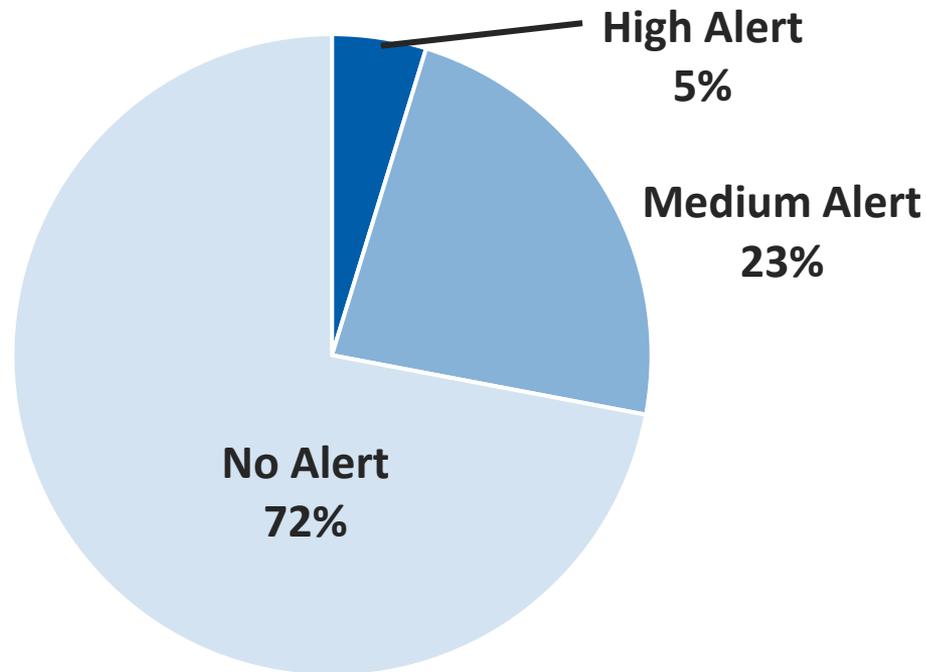
<sup>†</sup> The complete set of 24 loci is referred to as 24-locus MIRU-VNTR and is used for U.S. GENType designations.

# Number of County-based TB Genotype Clusters\* by Cluster Size, United States, 2018–2020



\* Genotype clusters are defined as two or more cases with matching spoligotype and 24-locus MIRU-VNTR (GENType) within a county during the specified 3-year time period.

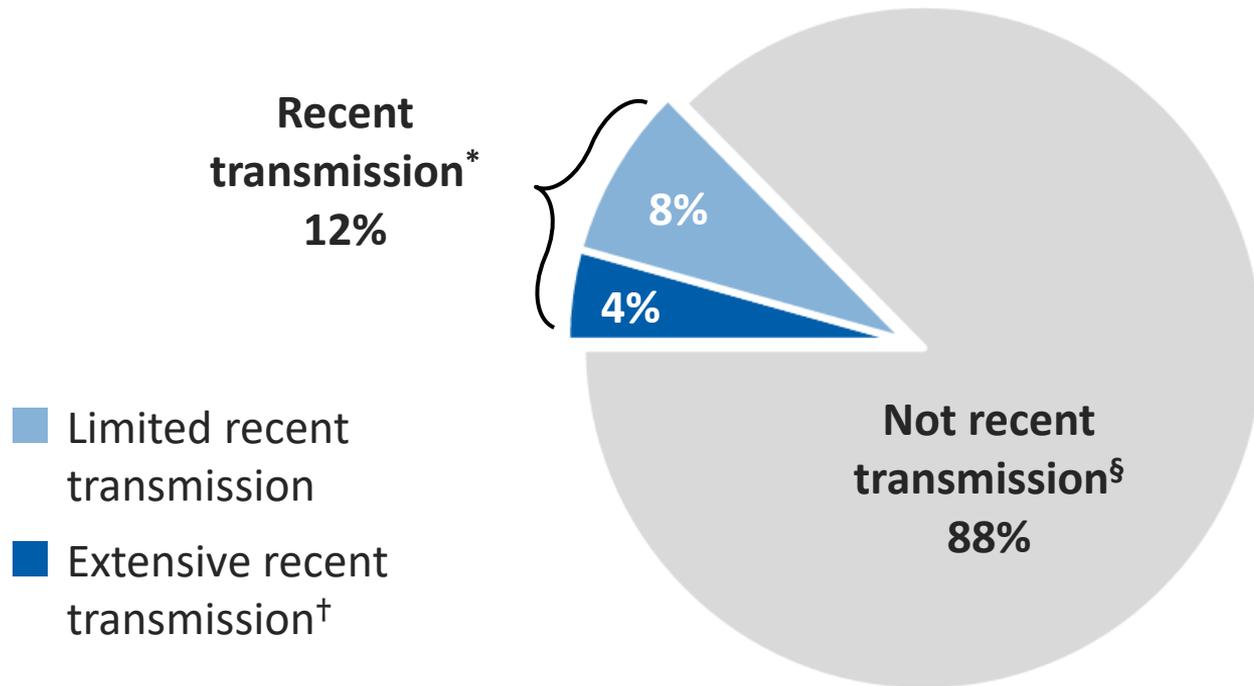
# TB Genotype Clusters by TB GIMS\* Alert Levels,<sup>†</sup> United States, 2018–2020 (N=1,280)



\* TB GIMS=Tuberculosis Genotyping Information Management System

<sup>†</sup> Alert levels are determined by the log likelihood ratio (LLR) statistic for a given cluster, identifying higher than expected geospatial concentrations for a TB genotype cluster in a specific county, compared to the national distribution of that genotype; TB GIMS generates alert level notifications based on this statistic: “No alert” is indicated if LLR is between 0–<5, “medium” is for LLR of 5–<10 and “high” alert is for clusters with LLR ≥10.

# Genotyped TB Cases Estimated to be Attributed to Recent Transmission, United States, 2019–2020 (N=12,242)

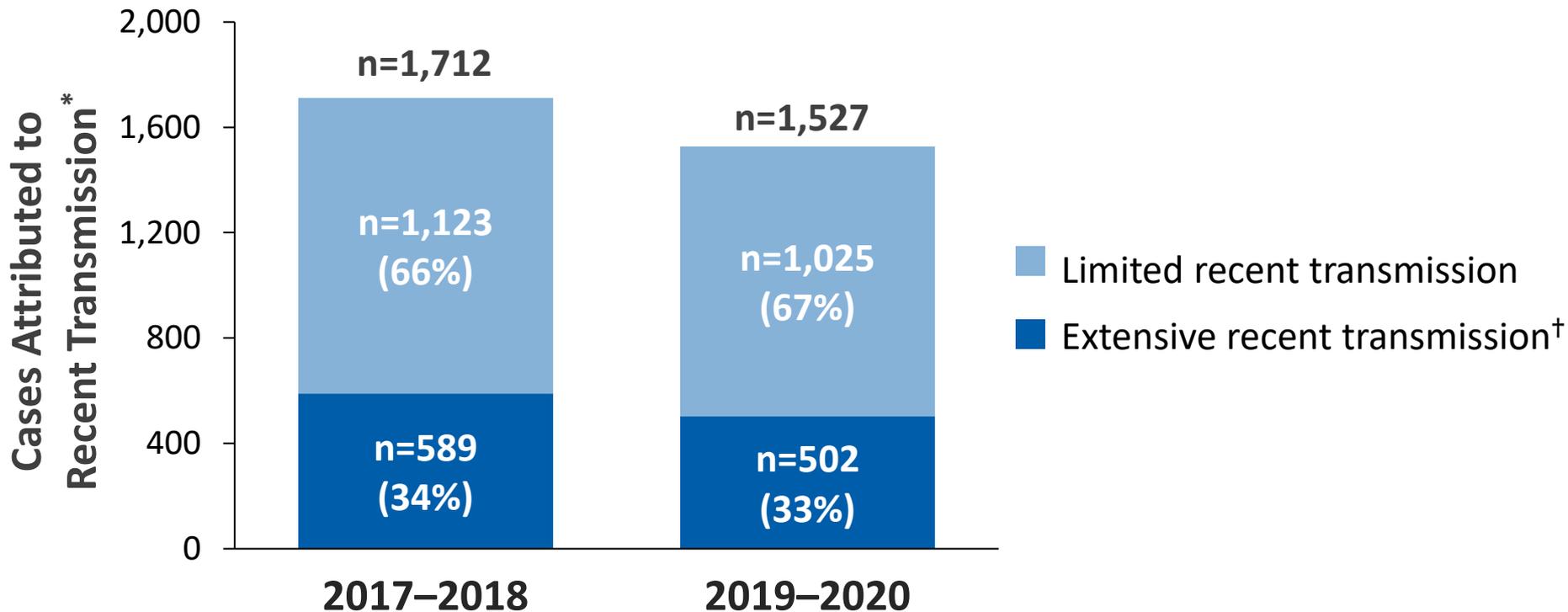


\* A TB case is designated as attributed to recent transmission if a plausible source case can be identified in a person who i) has the same *M. tuberculosis* genotype, ii) has an infectious form of TB disease, iii) resides within 10 miles of the TB case, iv) is 10 years of age or older, and v) was diagnosed within 2 years before the TB case.

† A TB case is designated as attributed to extensive recent transmission when the criteria above for recent transmission are met, and furthermore the case belongs to a plausible transmission chain of six or more cases. Otherwise, the case is designated as attributed to limited recent transmission.

§ Cases not attributed to recent transmission may be misclassified in children <5 years old or indeterminate in persons with a recent U.S. arrival due to limitations of the plausible-source case method.

# Genotyped Cases Estimated to be Attributed to Limited and Extensive Recent Transmission, United States, 2017–2020

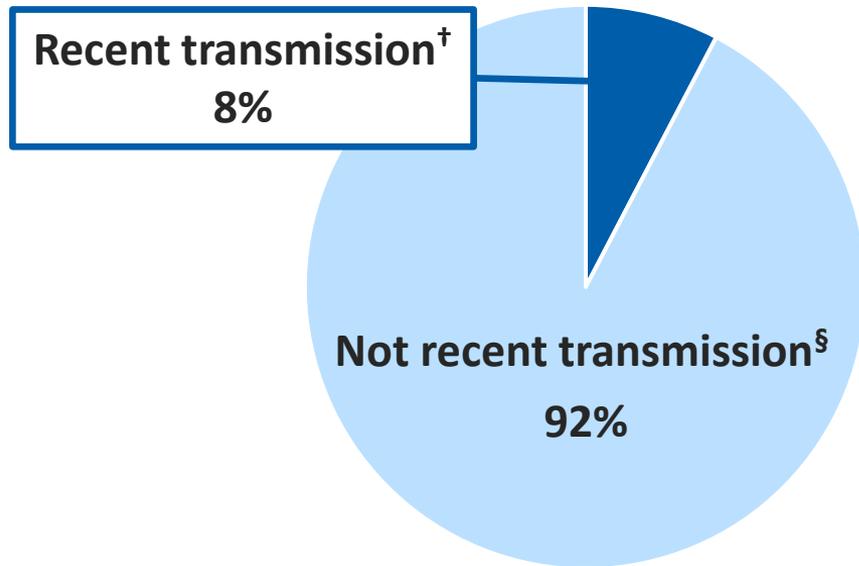


\* A TB case is designated as attributed to recent transmission if a plausible source case can be identified in a person who i) has the same *M. tuberculosis* genotype, ii) has an infectious form of TB disease, iii) resides within 10 miles of the TB case, iv) is 10 years of age or older, and v) was diagnosed within 2 years before the TB case.

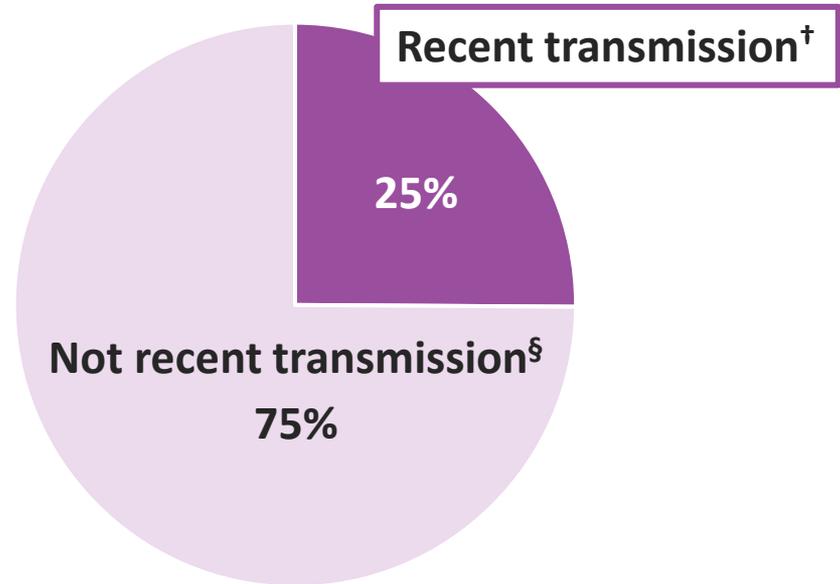
† A TB case is designated as attributed to extensive recent transmission when the criteria above for recent transmission are met, and furthermore the case belongs to a plausible transmission chain of six or more cases. Otherwise, the case is designated as attributed to limited recent transmission.

# Percentages of TB Cases Estimated to be Attributed and Not Attributed to Recent Transmission, by Origin of Birth,\* 2019–2020

Non-U.S.-born



U.S.-born



\* Cases with unknown origin of birth not shown (n=27).

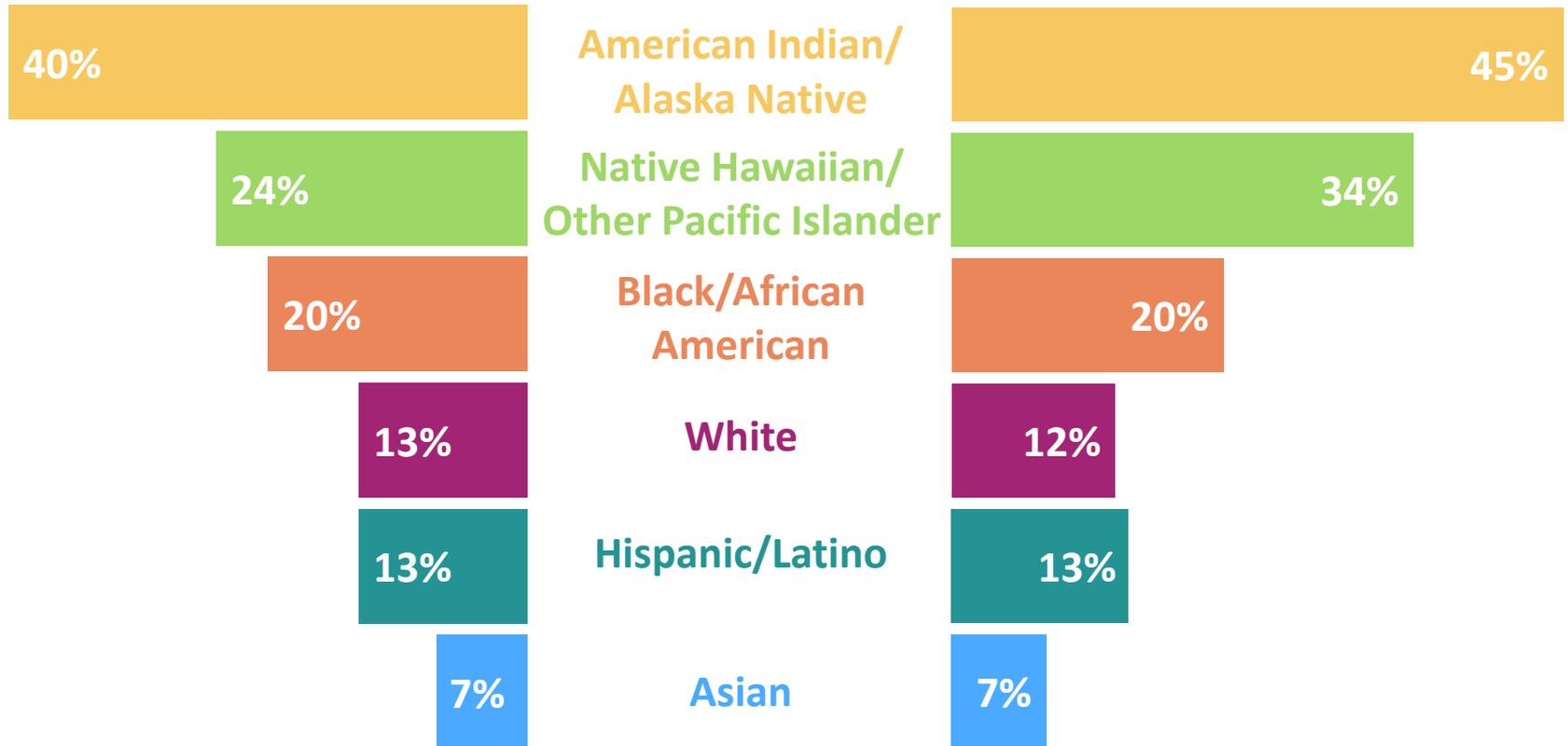
<sup>†</sup> A TB case is designated as attributed to recent transmission if a plausible source case can be identified in a person who i) has the same *M. tuberculosis* genotype, ii) has an infectious form of TB disease, iii) resides within 10 miles of the TB case, iv) is 10 years of age or older, and v) was diagnosed within 2 years before the TB case.

<sup>§</sup> Cases not attributed to recent transmission may be misclassified in children <5 years old or indeterminate in persons with a recent U.S. arrival due to limitations of the plausible-source case method.

# Percentage of TB Cases Estimated to be Attributed to Recent Transmission by Race/Ethnicity, United States, 2017–2020

2017–2018

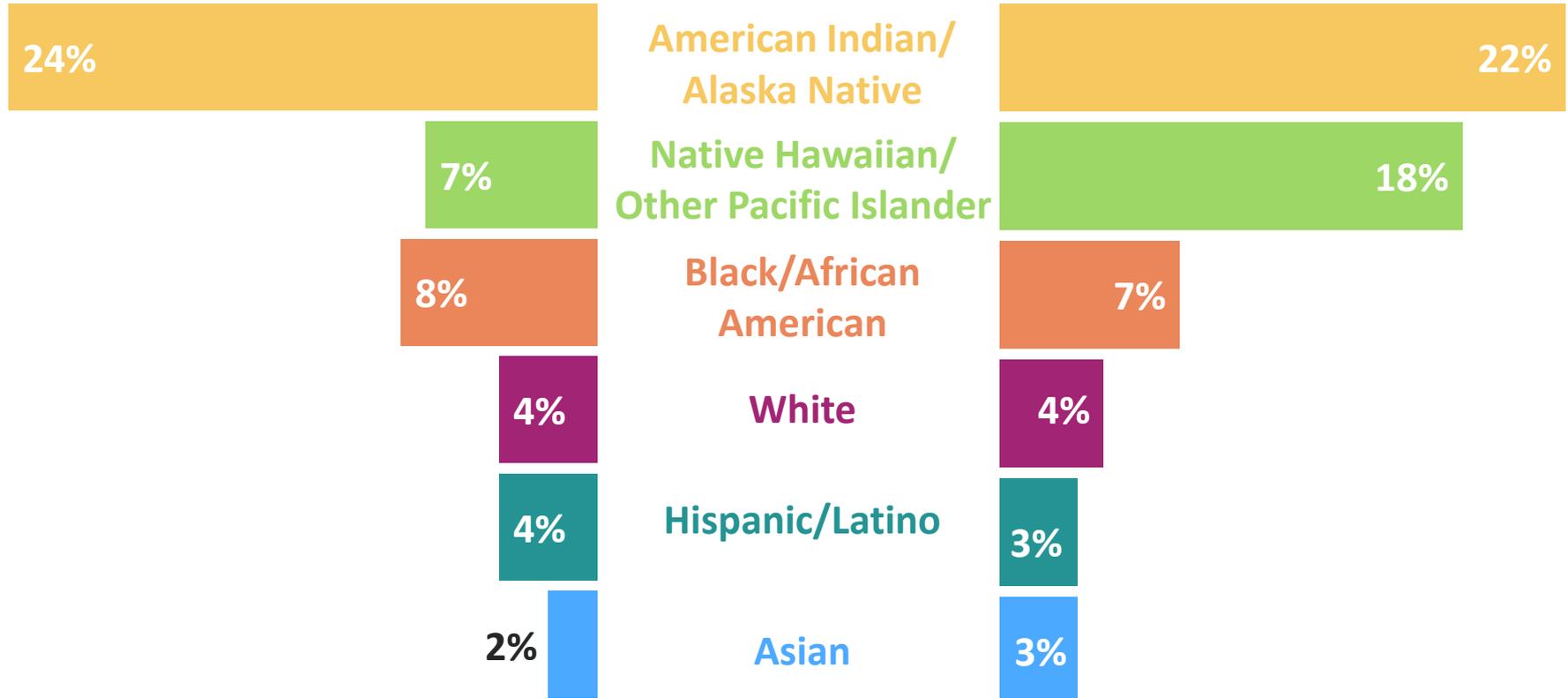
2019–2020



# Percentage of TB Cases Estimated to be Attributed to Extensive Recent Transmission by Race/Ethnicity, United States, 2017–2020

2017–2018

2019–2020



## **Division of Tuberculosis Elimination**

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

